SOUTH AUSTRALIA

ANNUAL REPORT

OF THE

Department of Public Health

AND THE

Central Board of Health

FOR THE

Year ended 31st December, 1964

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1966

THE PUBLIC HEALTH

Annual Report of the Department of Public Health and the Central Board of Health to the Minister of Health (Hon. Albert James Shard, M.L.C.)

SIR—We have the honour to submit the report for the Department of Public Health and the Central Board of Health for the year ended 31st December, 1964. The report is divided into the following sections:

1. Staff and administration.
2. Public Health Branch.
3. School Health Branch.
4. Poliomyelitis Branch.
5. Tuberculosis Branch.
6. Summary and comments.

Sections 2, 3, 4 and 5 deal with Branches of the Department and have been prepared by the officers in charge, namely the Principal Medical Officer (Public Health), the Principal Medical Officer for Schools, the Principal Medical Officer (Poliomyelitis) and the Director of Tuberculosis.

1. STAFF AND ADMINISTRATION

Personnel of the Board.—During the year the members of the Board were:—

Chairman—Philip Scott Woodruff, M.D., B.S., D.T.M. & H., F.R.A.C.P.

Members appointed by the Governor—

Sir John Cleland, C.B.E., M.D.Ch.M., F.R.A.C.P.
George Hugh McQueen, M.B., B.S., D.P.H., D.T.M., F.R.S.H., F.R.S.T.M. & H.

Member elected by the metropolitan local boards—

Charles John Henry Williamson, J.P.

Member elected by other local boards—

Alfred Bertram Cox, J.P., F.A.S.A., F.C.I.S.

Secretary—

Murray Edwin Stephens Bray.

In the New Year's Honours List 1964, Her Majesty the Queen conferred the title of Knight Bachelor on Sir John Cleland.

Staff of the Department.—As at 31st December, 1964, the principal staff consisted of the Director-General of Public Health (Dr. P. S. Woodruff), the Principal Medical Officer (Public Health) (Dr. G. H. McQueen), the Principal Medical Officer for Schools (Dr. C. O. Fuller), the Principal Medical Officer (Poliomyelitis) (Dr. B. H. Jeanes), the Director of Tuberculosis (Dr. T. G. Paxon), and the Secretary (Mr. M. E. S. Bray). Throughout the year there was an average of 191 officers and employees. Dr. R. R. Horton resigned from the position of Principal Medical Officer (Poliomyelitis) in July.

"Good Health".—Distribution of these booklets to local boards, medical officers and other interested persons continued this year. Subjects dealt with were:—

Combined voluntary and Government effort in Tuberculosis and Providing for the Elderly; dangers of discarded refrigerators; disposal of solid wastes; progress in dental health; new perspectives for the mentally ill; food handling survey; maternal mortality; replacement for arsenic as a weedkiller.

The National Health and Medical Research Council and Committees.—The 57th session at Melbourne and the 58th session at Canberra were both attended by Dr. P. S. Woodruff as State representative on the Council and the Public Health Advisory Committee.

Dr. G. H. McQueen, Principal Medical Officer (Public Health), attended the Occupational Health Committee meetings and Mr. R. C. McCarthy, Pharmaceutical Inspector, attended the meetings of the Food Standards and Poison Schedules Committees.

Maternal Mortality Committee.—This Committee met on two occasions during 1964 and considered 8 maternal deaths which occurred during the year. A consolidated report of the first 2½ years of the Committee's work was completed and published in the *Australian Medical Journal.*

Advisory Council on Health and Medical Services.—This Council is constituted under section 4 of the Health and Medical Services Act, 1949, to investigate and report on matters referred by the Honourable the Minister. Two

meetings were held late in the year to commence investigations into the Maintenance of Standards in Rest Homes and the care of persons needing such places. Some evidence was taken and the investigations were still proceeding at the time of preparing this report.

Clean Air Committee.—The members listed hereunder were appointed by the Governor in accordance with the amendment to the Health Act of 1963:—

Chairman—Philip Scott Woodruff, M.D., B.S., D.T.M. & H., F.R.A.C.P.

Nominated by—

The United Trades and Labor Council of South Australia—Lester Henry Johns.

The South Australian Railways Commissioner—Archibald William Charles Crossman, A.S.A.S.M., M.Inst.T.

The Electricity Trust of South Australia—Kenneth Harvey Milne, B.E., M.I.E.E., M.I.E.(Aust.).

The Council of the University of Adelaide—Professor John Henry Carver, M.Sc., Ph.D.

The Board of Directors of the South Australian Gas Company—James Patrick Burnside, B.Sc., A.M.T.C., M.Inst.F.

The South Australian Chamber of Manufactures—Ernest Melville Schroder.

A person representative of Local Government interests—Arthur Augustus Weir, M.M., D.A.C., F.R.A.C.I., F.A.S.A.

The following were appointed by virtue of their respective official positions:—

George Hugh McQueen, M.B., B.S., D.P.H., D.T.M., F.R.S.H., F.R.S.T.M. & H., Principal Medical Officer (Public Health), Department of Public Health.

Frederick Earl Roberts, M.I.Mar.E., Chief Inspector of Boilers and Factories, Department of Labour and Industry.

Harry Stephen Dean, M.E., A.M.I.P.E., A.M.I.A.E., M.I.E.(Aust.) A.M.I.AVE.E., Consulting Engineer, Industries Assistance Branch, Premiers Department (formerly attached to the Department of Labour and Industry).

Mr. H. N. Jones, Chief Clerk, Department of Public Health, acts as Secretary to the Committee.

The functions of the committee are to carry out investigations into problems of air pollution and air impurities and report to the Minister thereon and to advise and make recommendations to the Minister as to the making and contents of regulations on a variety of matters set out in the Act.

The first meeting was held in May, 1964. The Committee has continued to meet regularly and has considered a number of matters, and visits of inspection have been made to several industrial premises. A position of Fuel and Chemical Engineer has been created in the Department of Public Health, on the recommendation of the committee. Action is being taken to fill this position.

2. PUBLIC HEALTH BRANCH

This report of the Public Health Branch consists of the following sections:—

(*a*) Staff.
(*b*) Vital Statistics.
(*c*) Legislation.
(*d*) Control of Infectious Diseases.
(*e*) Control of Venereal Diseases.
(*f*) Supervision of Environmental Sanitation.
(*g*) Supervision of Septic Tank Sewage Disposal Systems.
(*h*) Supervision of Food and Drugs.
(*i*) Supervision of Occupational Health.
(*j*) Health Education.

(*a*) STAFF

The professional and sub-professional staff of the Public Health Branch of the Department of Public Health at the end of 1964 consisted of:

One Principal Medical Officer.
Four District Medical Officers.
Two Part-time District Medical Officers.
One Medical Officer for Gaols and Prisons.
Two Scientific Officers.
Two Pharmaceutical Inspectors.
One Biophysicist.
One Graduate Technician.
One Chief Inspector.
One Senior Inspector.
One Resident Inspector (Whyalla).
Two Occupational Health Inspectors.
One Air Pollution Inspector.
Five District Inspectors.
One Wine and Spirits Inspector.
Five Septic Tank Inspectors.

Four Common Drain Inspectors.
One Inspector for Aboriginal Affairs.
One Nurse Inspector.
Two Inspectors' Assistants.
Thirteen Part-time Inspectors.

During the year, Dr. B. H. Jeanes was appointed to the vacant position of Principal Medical Officer of the Poliomyelitis Branch. Dr. K. J. Wilson, one of the District Medical Officers, completed the course and passed the required examination for the Diploma of Public Health at the School of Public Health and Tropical Medicine, University of Sydney. He has been in charge of the Occupational Health Section of the Branch since his return.

With the exception of Medical Officer for Aborigines, all vacancies, which existed last year, were filled. Appointments during the year included three District Medical Officers, five Inspectors and one Inspector's Assistant.

Doctors E. K. Johnston and J. A. McGregor were appointed from outside the Public Service, and Dr. Z. Seglenieks was transferred from the Hospitals Department.

(*b*) VITAL STATISTICS

The following particulars for 1964 have been obtained from the Deputy Commonwealth Statistician. Some figures at this stage are subject to minor revision. Details for 1963 are shown in parenthesis.

Population.—The estimated mean population for the State in 1964 was 1,032,021 (1,008,862).

Births.—The number of births registered during 1964 totalled 20,866 (21,367).

The masculinity ratio, *i.e.*, the ratio of male births to female births, does not as a rule vary greatly from year to year. However, in South Australia there have been, in recent years, rather wide variations. The ratio fell in 1959 to the unusually low figure of 102.77, the lowest recorded since 1936, when the ratio was 102.43. The figure of 108.31 in 1964 is higher than the average ratio of 104.90 for the previous ten years, and is the highest since 1941 when the ratio was 109.58.

Still Births.—During 1964, 252 still births were registered. They are not included in births or deaths figures

Deaths Registered.—A total of 8,906 (8,201) deaths were registered during 1964, being the highest number recorded for the past five years. The death rate of 8.63 is 0.5 per cent higher than that of last year which was the second lowest on record, the lowest being 8.06 in 1961.

Infantile Mortality.—Infant deaths registered during 1964 totalled 397 (399). The resultant infant mortality rate was 19.03; lower rates have been recorded only twice before 18.94 in 1960 and 18.67 in 1963.

There were 277 (276) deaths of children under one month, and 120 (123), deaths of children aged from one month to one year.

The main causes are shown in the following Table No. 1.—

TABLE 1—INFANT DEATHS—MAIN CAUSES—SOUTH AUSTRALIA, 1960-1964

Cause	1960	1961	1962	1963	1964
	No.	No.	No.	No.	No.
Diarrhoea	8	12	7	15	9
Congenital Malformations	95	102	76	91	79
Prematurity	82	72	77	72	82
Injury at birth	39	46	56	41	38
Post-natal Asphyxia and Atelectasis	28	38	39	36	58
Other diseases peculiar to early infancy	43	65	52	63	41
Cerebro-spinal Meningitis	1	3	—	1	2
Meningitis	5	1	5	—	3
Whooping Cough	1	—	1	1	1
Pneumonia	23	38	47	42	37
Hernia and Intestinal Obstruction	6	8	4	6	6
External causes	12	24	11	9	14
All other causes	54	39	34	22	27
Total	397	448	409	399	397

Marriages.—The number of marriages registered during 1964 totalled 7,765 (7,302). The rate per 1,000 of the mean population was 7.53 (7.24). The mean age of marriage for bachelors was 25.16 (25.49) years, and for spinsters 22.01 (22.12).

Summary.—The following Table 2 shows the numbers and rates per 1,000 of the mean population of registered births, deaths and marriages and the infantile death rates per 1,000 live births for the years 1960-1964.

TABLE 2—BIRTHS, MARRIAGES AND DEATHS—NUMBERS REGISTERED AND RATES

Period	Births Registered		Marriages		Deaths Registered			
					Total		Infants	
Year	No.	Rate (*a*)	No.	Rate (*a*)	No.	Rate (*a*)	No.	Rate (*b*)
1960	20,966	22.19	6,607	6.99	7,804	8.26	397	18.94
1961	22,399	23.10	6,804	7.02	7,815	8.06	448	20.00
1962	21,361	21.58	7,021	7.09	8,232	8.32	409	19.15
1963	21,367	21.18	7,302	7.24	8,201	8.13	399	18.67
1964	20,866	20.22	7,765	7.53	8,906	8.63	397	19.03

(*a*) Per 1,000 of mean population (*b*) Per 1,000 live birt hs

(*c*) LEGISLATION.

Health Act and Health Regulations.—No amendment was made to the Health Act. A Health Regulation dealing with methylchloride was varied to permit its use in refrigerators sold before 30th June, 1964, until 30th June, 1968.

Food and Drugs Act and Regulations.—No amendment was made to the Act.

Regulations dealing with hand washing facilities, margarine, sorbic acid, skim milk powder, malted milk powder, marzipan, vitamins, minerals and antibiotics came into force. Most of these amendments related to the adoption of uniform food standards. A Consolidation of the Food and Drugs Regulations was prepared and printed during the year.

Other Acts and Regulations.—During 1964, the area to which the Noxious Trades Act applies was extended to include the district council districts of East Torrens, Meadows, Munno Para, Noarlunga, Tea Tree Gully, and Willunga, the municipality of the city of Salisbury, the towns of Gawler and Elizabeth, and portions of the district council district of Stirling.

(*d*) CONTROL OF INFECTIOUS AND NOTIFIABLE DISEASES AND TUBERCULOSIS

Statistics.—Infectious and notifiable diseases in the Second and Third Schedules of the Health Act and tuberculosis are notified to local boards of health and the Central Board of Health. Tuberculosis is notified to the Central Board of Health in the first place.

Those notified in the years 1962, 1963 and 1964 are shown in Table 3.

TABLE 3

Infectious Diseases	Cases			Deaths		
	1962	1963	1964	1962	1963	1964
Acute infective encephalitis	2	6	2	—	2	3
Amoebiasis	1	—	1	—	—	—
Ancylostomiasis	—	—	2	—	—	—
Diphtheria	4	—	—	—	—	—
Diarrhoea, infantile infective	—	34	12	—	—	—
Dysentery, Bacillary	46	197	73	—	—	—
Leptospirosis	—	1	2	—	—	—
Malaria	1	—	—	—	—	—
Meningococcal Infection	10	6	5	2	2	5
Ornithosis	—	1	1	—	—	—
Paratyphoid fever	—	11	1	—	—	—
Poliomyelitis	19	10	2*	2	1	—
Puerperal pyrexia	—	2	2	—	—	—
Salmonella infection	69	48	120	1	—	—
Scarlet fever	181	198	202	—	1	—
Trachoma	—	54	42	—	—	—
Typhoid fever	1	3	4	—	—	—
Tuberculosis, pulmonary	210	205	147	35	27	9
Tuberculosis, other forms	32	31	30	1	—	1
Notifiable Diseases	—	—	—	—	—	—
Acute rheumatism	10	5	—	—	—	—
Brucellosis	—	—	2	—	—	—
Eclampsia	—	—	—	—	1	—
Erythema Nodosum	1	1	3	—	—	—
Encephalitis, following another disease	2	3	1	—	—	—
Hydatid disease	1	—	—	2	—	—
Infective hepatitis	504	293	289	3	—	2
Lead poisoning	1	1	—	—	—	—
Ophthalmia	1	2	—	—	—	—
Rubella	541	621	664	—	—	—
Tetanus	—	—	—	—	3	—

*Diagnosis subsequently altered

A notable increase occurred in the incidence of salmonella infections and notable decreases occurred in the incidence of bacillary dysentery, poliomyelitis and tuberculosis.

Infective Hepatitis.—Compulsory notification came into force in South Australia in 1954; the number of cases reported each quarter for the years 1957-1964 is shown in Table 4.

TABLE 4—NOTIFICATIONS OF INFECTIVE HEPATITIS IN SOUTH AUSTRALIA

Year	1957	1958	1959	1960	1961	1962	1963	1964	Totals
1st quarter	93	50	289	142	490	254	86	51	1,455
2nd quarter	48	38	127	154	237	91	56	92	843
3rd quarter	73	41	106	247	306	74	58	46	951
4th quarter	44	178	227	578	373	85	93	100	1,678
Totals	258	307	749	1,121	1,406	504	293	289	4,927

This disease continues to be the second most frequently reported disease in South Australia. It followed its usual seasonal pattern during 1964, when its incidence suggests that it may be reaching the lowest level of a long incidence cycle of seven or eight years.

Salmonella Infection.—As a result of attention given to the occurrence of diarrhoea during the year, it became evident that salmonella infections were occurring much more frequently than was previously thought. In searching for sources of infection many carriers of various types of salmonella organisms were found among human beings and animals associated with patients affected with this disease. Various food stuffs, and in particular kangaroo meat prepared for animal consumption, were found to be infected with salmonella organisms. Frequently this infected food for animals was stored and prepared with food for human beings and probably became the source of infection for human beings as well as animals.

Typhoid Fever.—During 1964, three cases of typhoid fever were reported and subsequently fully investigated. One of the cases was a child, and his infection was suspected to have been contracted while digging in the grounds of the Islington Sewage Farm. All members of his family were investigated but results were negative. The other two cases occurred on Yorke Peninsula, one case in Maitland, the other in Wallaroo. Extensive investigations, many serological, were carried out in this area with the assistance of the Senior Medical Bacteriologist at the Institute of Medical and Veterinary Science. However, the source of these infections was not determined. There appeared to be no link between the two cases, despite the fact that organisms from both cases were of type F1. In the course of these investigations a typhoid carrier was found, a woman who had suffered from typhoid fever many years ago. The pathogenic organisms found in her case were not of a similar type to those found in the two cases of typhoid fever mentioned above.

Paratyphoid Fever.—The reported case of paratyphoid fever was diagnosed on clinical and serological evidence. On investigation no source of infection was found and no secondary infections occurred.

Trachoma.—The number of trachoma notifications did not vary significantly. The disease occurred mainly among people living in the Northern parts of the State. Thirteen of those notified were children from the Ceduna area. Two cases of trachoma-inclusion-conjunctivitis were confirmed by cytological methods.

Poliomyelitis.—Two cases of poliomyelitis were notified and both patients recovered. The suspected diagnosis of poliomyelitis was not confirmed in either case. Further details of the work of the Department in controlling this disease are given in the report of the Poliomyelitis Branch.

Tuberculosis.—Falls in the incidence and death rates for tuberculosis per 100,000 of the mean estimated population were steeper during 1964 than in the previous year. These were 17.14 (23.3) and 0.97 (2.67) respectively.

(*e*) CONTROL OF VENEREAL DISEASE

During 1964, £2,674 (£2,321) was spent by the Department of Public Health on gonorrhoea and syphillis investigation and treatment. The majority of this amount was paid to the Institute of Medical and Veterinary Science for bacteriological and serological tests done for private practitioners.

A total of 63 (90) patients were investigated at the Department's Female Investigation Clinic at the Royal Adelaide Hospital.

Gram negative diplococci resembling gonococci were seen in smears from 7 (25) of these patients and sera from 10 (6) gave positive gonococcal complement fixation tests.

One patient gave a weak positive test for syphilis.

Whenever possible contacts of patients suffering with gonorrhoea or syphilis were investigated.

The figures in parenthesis refer to the year 1963.

(*f*) SUPERVISION OF ENVIRONMENTAL SANITATION

Routine Inspection.—The Central Board of Health and its officers act in a supervisory and advisory capacity to local boards of health and their officers.

Routine inspections by officers of the Central Board of Health of local boards of health areas are important as they serve as the best means of co-ordinating health work throughout the State, of disseminating all current Central Board of Health policies, decisions, interpretation of Acts and Regulations, of ensuring that current trends concerning health are known to local boards and their officers and where necessary of giving advice regarding their adaptation.

Due to pressure of other work on limited staff, routine general inspections of local board areas have been discontinued with one exception and only matters of special difficulty or importance have received attention. The Branch has primarily concentrated on matters directly concerning the Department.

Following the appointment of additional staff, it is anticipated that routine general inspections of local board areas will be recommended in the near future for, as indicated above, they serve a useful purpose.

Land Subdivisions.—The Town Planner submitted plans of 22 acres for subdivision.

The sizes of the building allotments were checked and reports prepared on existing conditions or conditions likely to develop should the allotments be used continuously for the disposal of domestic waste waters.

Six areas previously submitted for report were resubmitted in an amended form during the year and approved.

In some instances, it was necessary to report that the areas of some proposed allotments were insufficient for the continuous disposal of domestic waste waters and larger areas were recommended.

Air Pollution.—The collection of atmospheric deposited matter, commenced in 1961, was continued throughout the year.

Deposited matter is now being collected from 54 sampling points in the metropolitan area of Adelaide and at Port Stanvac and Angaston.

This is the fifth year of the survey and the results so far obtained indicate the need for it to be continued.

Testing of the atmosphere for the presence of sulphur dioxide was commenced in the metropolitan area during December and will be continued during 1965.

House Fly Control.—The campaign commenced during the summer of 1961 in the metropolitan area was again continued during the summers of 1963-64 and 1964-65.

It has become apparent as the survey continues that the highest levels of infestation occur in early autumn and early summer as the extremes of temperature do not favour fly-breeding.

Particular attention was again paid to temporary pit and pail type privy accommodation at building and construction sites, to the storage of organic material at glass houses and places where animals are kept commercially, and to the disposal of lawn clippings at domestic premises, parks and gardens.

Consideration is being given by the Central Board of Health to recommending legislation to improve the standard of privy accommodation at building and construction sites.

Methods of collecting, storing and using organic material vary greatly from district to district and from individual to individual. This makes it difficult to decide on a single satisfactory and suitable method of treating this material to prevent flies breeding.

However, changes in methods used and application of organic manure and watering at different times have reduced fly-breeding in glasshouses used for intensive growth of vegetables.

Indications up to date are that the adult fly population is diminishing and that work over the past three years is beginning to have effect.

Quarterly Meetings of Health Inspectors.—Meetings of Health Inspectors were held in March, June, September and December. These meetings originated from a desire to co-ordinate activities and produce a uniform approach to matters of health inspection and in particular, fly control. The meetings were well attended and served a useful purpose. The co-operation of local boards in allowing their Inspectors to attend is appreciated.

Mosquitoes.—Aerial spraying with an organic phosphate of 6,700 acres of swamp and mangrove areas in and near the Port River, Torrens Island, St. Kilda and parts of LeFevre Peninsula was carried out in December.

This was again organized by the Department at the request of the local boards of health for the cities of Port Adelaide, Salisbury and Enfield, the Commonwealth Health Department, and the Electricity Trust of South Australia.

The Woodville and Henley and Grange Local Boards of Health arranged for the upper tidal reaches of the Port River in their areas to be similarly sprayed to reduce the problem in that area.

Reports received in January and February, indicated that the spraying carried out in 1963 was successful.

Swimming Pool Survey.—At the beginning of December, staff of the Institute of Medical and Veterinary Science, together with an officer of this Branch, began a survey of private and public swimming pools in the metropolitan area and near country areas.

Fifty-five pools were visited, forty in the metropolitan area and fifteen in the country.

The chlorine content and the pH values were tested at pools and samples of water collected for bacteriological examination.

Observations were made of the standard of general hygiene of each pool and its facilities. The survey will be continued during early 1965.

Microbiological Specimens.—A valuable aid in carrying out the branch's duties is to be able to have microbiological specimens examined by the Institute of Medical and Veterinary Science staff, and 534 specimens were submitted by the Branch for examination during the year as part of its own work or on behalf of local boards.

Private Hospitals and Rest Homes.—Routine inspections of private hospitals and rest homes by the Nurse Inspector have been continued throughout the year in the metropolitan and country areas.

Investigations of sterile water supplies in hospitals has continued from 1963 and continuation of the investigation is warranted in several instances.

Regular attendance by the Nurse Inspector during the year at the Female Investigation Clinic at the Royal Adelaide Hospital has at times necessitated further investigation of venereal disease contacts.

Lodging Houses.—In October, the Glenelg Local Board of Health made regulations under the Health Act to control the conduct of lodging houses in its area.

Occupational Health.—The Public Health Inspection Section assisted in occupational health work during the year by conducting a preliminary survey of working conditions in foundries by operating air sampling equipment, by participating in audiometric testing of selected work groups and by making inquiries associated with the administration of Radioactive Substances and Irradiating Apparatus Regulations.

Lead in Toys.—Following action taken in the United Kingdom to examine polythene type plastic toys containing lead, similar toys of overseas and Australian manufacture were purchased in Adelaide for analysis. All of the toys contained lead ranging from 1 part per million up to 4,000 parts per million.

The lead content of toys of Australian origin ranged from 6 to 76 parts per million and this was generally less than those of overseas origin.

All red toys had a lead content in excess of 1,750 parts per million.

Whyalla District Inspector's Report.—The following paragraphs refer to activities of the District Inspector who is stationed at Whyalla:—

At the end of 1964, the estimated population of Whyalla was 19,500.

Generally, duties were concentrated in Whyalla, but inspections were made at Iron Knob, Iron Baron, and most local board areas on Eyre Peninsula.

Septic Tank Installations at Whyalla.—A total of 1,039 septic tank inspections were made in Whyalla and 356 systems were passed as satisfactory. These included larger installations such as the Whyalla Hospital extension, a chemical laboratory, industrial amenity blocks and the Whyalla Division of the Institute of Technology.

Septic tank installations were also inspected in the local board areas of Port Augusta, Franklin Harbour, Cleve, Le Hunte, Elliston, Murat Bay, Streaky Bay and Lincoln, and the out-districts of Iron Knob and Iron Baron.

Inspections outside Local Government Areas.—Outside the Whyalla Local Board area are establishments whose sanitation is the direct responsibility of the Central Board. These include the Broken Hill Proprietary Works, Whyalla Abattoirs, Whyalla Dairy, Whyalla Sanitary Depot and an area of land approximately 5 miles from the built-up section of the city, leased by the Lands Department for grazing purposes, on which six piggeries are established.

These places were regularly inspected during the year.

Relief of Whyalla Meat Inspector.—The Meat Inspector was relieved at the Whyalla Abattoirs for a total period of 33 days.

Food Handling.—Discussions on good food handling techniques, supported by a film, were given in the local board areas of Le Hunte, Murat Bay, Streaky Bay, Elliston and Whyalla to groups of local food handlers.

(*g*) SUPERVISION OF SEPTIC TANK SEWAGE DISPOSAL SYSTEMS

The provisions of the Health Act require the submission and approval by the Central Board of Health of plans and specifications of septic tank sewage disposal systems before installation is commenced.

Plans were approved for 4,238 proposed installations, a decrease of 292 from 1963; and permits were issued for 3,476 installed systems, a decrease of 1,404 from 1963.

Inspections of all sites in the metropolitan and fringe area, before plans were approved, were continued throughout the year. This area was extended to include Murray Bridge area. These inspections ensure that the best use is made of the site for effluent disposal.

In this area 80,965 miles were travelled by five Inspectors to make 15,910 progress inspections.

In many areas where there may be difficulties with the disposal of effluent, it has been found necessary to require that impervious pumping chambers be placed between the septic tank and the commencement of the effluent disposal area.

Twelve common drainage schemes in the Tea Tree Gully area, and one in Noarlunga, were completed. A common drainage scheme to serve the whole of the township of Barmera and the second stage of the scheme at Pinnaroo were also completed.

Surveys have been commenced for Berri and stage 3 of Pinnaroo, whilst the planning of Meningie and Paringa systems has been completed.

(*h*) SUPERVISION OF FOOD AND DRUGS IN SOUTH AUSTRALIA

Premises where food and drugs are maufactured, prepared, packed or stored for sale are inspected at intervals by officers of the Branch to ensure that standards of cleanliness and quality are maintained.

Analysis of Food and Drugs.—Provision is made in the Food and Drugs Act for taking of samples of food and drugs offered or exposed for sale to determine whether the prescribed standards are being met. The major part of this work in regard to food is undertaken by the Metropolitan County Board and other local authorities.

Details of the samples analysed during 1964, and the subsequent action taken, are set out in Table 5.

TABLE 5—RESULTS OF ANALYSES OF FOOD AND DRUGS FOR 1964 (SHOWING ONLY SAMPLES SUBMITTED FOR ANALYSIS)

Article	No.	Results of Analysis	Action Taken
Aerated waters	2	1 Conformed to Regulations	—
		1 Contained Aluminium paint	—
Bread	10	Conformed to Regulations	—
Bread, Vienna	5	1 Conformed to Regulations	1 prosecuted
		3 Deficient in sugar or edible fats	1 warned
		1 Deficient in protein	
Butter	14	7 Conformed to Regulations	7 prosecuted
		7 Not butter, but sold as butter	—
Confectionery	13	2 Contained prohibited colouring, Patent Blue and Rhodamine	—
Cream, Pure	8	5 Contained thickeners	5 prosecuted
Fritz	4	1 Contained excess preservative	2 warned
		1 Deficient in meat	—
Fruit Juice, Orange	1	Conformed to Regulations	—
Honey	1	Conformed to Regulations	—
Ice Cream	1	Deficient in Milk Fat	—
Jam, plum	1	Contained jute fibre	—
Jelly crystals	10	Conformed to Regulations	—
Meat	1	Conformed to Regulations	—
Meat, minced	95	30 Contained excess preservative	20 prosecuted
Milk	622	35 Deficient in fats or solids	21 prosecuted 14 warned
Peanut paste	1	Conformed to Regulations	—
Pickled Onions	1	Conformed to Regulations	—
Sausage	37	11 Deficient in meat content and/or contained excess preservative	9 prosecuted 2 warned
Vegetable Oils	7	2 Misrepresented	4 prosecuted
		2 Did not conform to B.P. standard	1 warned
		1 Contained excess oleic acid	
Vinegar	5	Conformed to Regulations	—
Water	14	Analysed for a variety of reasons (mainly heavy metals)	

Food Handling Survey.—In the latter part of the year, officers of the Branch collaborated with staff of the Institute of Medical and Veterinary Science in making a survey of food premises to determine the bacteriological quality of foodstuffs and equipment.

The survey was concentrated in the Enfield, Glenelg, Elizabeth and Victor Harbour areas and the district of Noarlunga.

Fifty premises including delicatessens, bakeries, grocery shops, school tuck-shops and hotels were visited.

Of the 262 food samples tested, 22 contained food poisoning bacteria. Of these 21 contained staphylococci and one contained salmonellae.

The general hygiene in most cases was good, but there was evidence of poor management in some premises.

Temperatures in 22 commercial refrigerator cabinets measured during the survey ranged from 43°F to 70°F. The startling fact here was that not one refrigerator could be accepted as fully safe in preventing multiplication of food poisoning organisms and some were so ineffective as to be dangerous.

Buffalo Meat.—Imports of boneless buffalo meat from the Northern Territory were continued.

The meat is transported to Adelaide by air freight, refrigerated semi-trailer vans or Commonwealth Railway vans, and is accompanied by a certificate of inspection from the Animal Industry Branch of the Northern Territory Administration.

During the year, 180,760 lb. of boneless buffalo meat were brought into the metropolitan area.

Supervision of Wines and Spirits.—During the year, 327 licensed premises including hotels, wine saloons and stores were visited in metropolitan and country areas.

A total of 7,807 tests were made of opened bottles of wines and spirits for sale at these premises and of these 10 samples were purchased for official analysis.

The Central Board of Health subsequently authorized legal proceedings under the Food and Drugs Act for misrepresentation against four licensees of the hotel premises concerned.

Thirty-nine warnings were issued for minor breaches of the Food and Drugs Regulations.

Reconstituted Milk.—As in previous years, some milk producers have found difficulty in maintaining the solids not fat component of milk at the standard required by regulation. The policy of the Central Board of Health is to issue permits for the addition of skim milk powder for the reconstitution of milk to the required standard.

The Central Board may also permit this milk, which must be pasteurized, to bc sold as "Pasteurized Milk."

Five companies were granted permits by the Central Board during 1964 to add skim milk powder to milk and to label the product "Pasteurized Milk" and sell it as such.

The number of gallons of reconstituted milk sold totalled 1,199,328 and the amount of skim milk powder used was 18,578 lb.

Uniform Standards.—Further progress was made with the adoption of uniform food standards recommended by the National Health and Medical Rescarch Council. They include margarine, sorbic acid as an alternative preservative, skim milk and malted milk powders, marzipan, vitamins and minerals. A number of draft standards are under consideration and progress was made towards final drafts.

Drugs.—There has been continued high level activity in the various aspects of drug control. Routine inspections have been regularly made under the Dangerous Drugs Act. The sale of restricted drugs without prescriptions has been closely watched. Two pharmacists were prosecuted during the year for the sale of such drugs; their cases were eventually considered by the Pharmacy Board, and periods of suspension of registration were imposed. The labelling of dispensed medicines with the names of the drugs has been under consideration, and representations from the medical and pharmaceutical professions have been received; in view of the opposing views expressed, it will be some time before finality in the matter is reached.

(*i*) SUPERVISION OF OCCUPATIONAL HEALTH

As in the previous year, the work in this section arose from either investigational projects or as the result of requests, complaints, accidents or illnesses.

The investigational work included a survey of the use of lead in industry commenced during the previous year, a survey of blood cholinesterase levels in the users of organic phosphate insecticides in the Upper Murray River areas, and a survey of noise levels in timber industries in the South-East of the State.

Inspections of premises where lead-in-air sampling had been carried out previously were made to determine whether the recommendations made had been implemented.

Air sampling was carried out at two solder manufacturers. The conditions at one factory were satisfactory while those at the other were not. In the latter, as the result of air sampling, the Department of Labour and Industry withheld factory registration until some effort was made to meet our requirements.

Extensive air sampling was carried out at a newly established battery factory, and the management notified of the results. As a consequence, the management is making every effort to reduce the amount of lead in air.

Problems at seven factories were referred by the Department of Labour and Industry. Advice has been given on four of these and the remainder are being currently investigated. The problems included mineral and paper dust, lead, toxic solvents and hydrocarbons. A further two problems were investigated as the result of Department of Labour and Industry Accident Reports. Assistance was also given to the Department of Labour and Industry in a Safety Symposium arranged with representatives of the Furniture Trade regarding safe handling practice in production of plastic finishes.

As the result of accidents or illnesses notified by outside medical officers, investigations and sampling were carried out at four factories. In one, lead poisoning occurred, in another suspected carbon monoxide poisoning occurred and in two others effects of paint solvents were evident. Operators are now using protective equipment when they carry out a particular job to avoid lead poisoning.

Five complaints of working conditions, two of which were received from the Stevedoring Industry Authority, were investigated. One of these latter complaints was the problem of oxides of nitrogen and carbon monoxide allegedly affecting the operator driving a diesel bull-dozer in a ship's hold at Port Pirie. The other four complaints were of fumes from internal combustion engines, paint, coal gas and cyanides.

Eight requests were received directly from outside organizations to give advice on toxic substances in industry. In all cases investigations and sampling were carried out. The problems included exposure to carbon monoxide, chromic acid, lead, mineral dust, cyanides, polystyrene, acid fumes, cadmium fumes and a worker's exposure to organic phosphate materials.

A number of telephone inquiries from medical practitioners, factory management and Department of Labour and Industry officers regarding toxic substances were answered.

Following the notification from the Occupational Health Committee that a brand of respirator cartridge was defective, action taken by the Department of Public Health was responsible for its withdrawal from sale in South Australia. When fresh stock reputed to be satisfactory was again on sale, samples were purchased and tested. All samples failed to meet the standard specification and all stock of this type and make of respirator cartridge was again withdrawn from sale in this State.

Apart from our own direct reading instruments, dust counting and samples for blood cholinesterase activity, 98 occupational health and 63 air pollution samples were forwarded to the Department of Chemistry for analysis.

Advice was given regarding the cause of the corrosion of a boiler house roof, and a problem currently being investigated is the emission of metal fume from a scrap metal recovery plant.

Since 1st November, 1964, a continuous smoke and sulphur dioxide sampler has been in operation at Thebarton Police Station. Arrangements have been made with the Police Department to have about 12 samplers working at Police Stations in areas adjacent to industry.

New equipment—A transistorized radiation monitor (Philips PW4012) has been purchased for investigation of industrial radioisotope sources, and X-ray units. For the purpose of carrying out industrial hearing conservation programmes and noise surveys, two screening audiometers and a Bruel and Kjaer sound level meter and octave filter set have been purchased.

Noise Surveys.—During the year, eight noise surveys were completed in various establishments in the metropolitan area. Four additional surveys were commenced and are being continued.

As a result of the above surveys, hearing conservation programmes have been introduced in six instances. The above has led to the testing of some 250 employees, for hearing loss.

These noise surveys were carried out at the request of the Department of Labour and Industry, private industry, other Government Departments and certain trade unions.

Several discussions on industrial noise were also held with various industrial groups during the year.

Radiation Surveys.—During the year the amount of radioisotopes used for medical and industrial purposes has continued to increase.

Secondary schools have been advised of the Radioactive Substances and Irradiating Apparatus Regulations and have been provided with a set of safety precautions dealing with the handling of radioisotopes.

The industrial application of certain isotopes has been investigated, including an extensive examination of certain installations in the Whyalla area.

Information regarding the disposal of radioisotopes has been forwarded by the section, when requested, and the use of Co^{60} by Civil Defence workers in their training programme has also been examined.

Several industrial radiography units were examined during the year, and the possibility of ultrasonic testing, replacing some industrial radiography, investigated.

A set of recommendations for X-ray protection in the use of dental X-ray units was forwarded to dentists throughout the State as a supplement to the Australian Dental Association Newsletter No. 9/64, September 1964.

Investigations have been instituted regarding the use of thermoluminescence dosimetry in the field of occupational health.

Health Regulations.—Trends noted previously in the use of ionising radiation continue, with steady increases in the number of users licensed and ionising apparatus registered as required by the Radioactive Substances and Irradiating Apparatus Regulations under the Health Act.

New sources entering South Australia include Promethium 147 for use in paper mill thickness control gauges (as well as Strontium 90 for this purpose). Senior science classes in high schools and colleges have begun using selected sealed sources in limited amounts and under careful control, based on safety precautions issued by the Department of Public Health.

All applications received from persons other than medical and dental practitioners for the use of ionising radiation, covering industrial, research and educational use, have been investigated before issuing licences. Where necessary, advice has been given on precautions to ensure health and safety. These investigations have also covered inspection of premises, equipment and techniques used by veterinary surgeons. The use of radioisotopes in training by Civil Defence Authorities and radiographic apparatus and techniques used by chiropractors have received special attention.

Radiation doses received by both operators and patients during an extensive survey of school children's teeth, which was carried out by Dr. E. Fanning of the University Division of Preventive Dentistry, were also investigated and found satisfactory.

Equipment necessary for carrying out a "Surpak" survey of dental X-ray units in the State, including a highly sensitive densitometer, has been obtained and basic standards are being prepared with present facilities.

Licences.—Licences granted for 1964 are as follows:

Type of Application	Granted to 31/12/64	Increase on 1963
To import and sell radioactive substances	4	—2
To use radioactive substances	163	50
To import and sell irradiating apparatus	4	2
To use irradiating apparatus (total)	642	232
To register irradiating apparatus—		
First unit	284	74
Additional units	147	47
Total number of registrations	431	121

Additional licences granted to use irradiating apparatus comprise the following groups:

Radiotherapy	3
Radiotherapy, Radiography and Fluoroscopy	12
Radiography and Fluoroscopy	65
Radiography	129
Industrial and other uses	23
	232

Monitoring.—All licensed users of irradiating apparatus or radioisotopes in South Australia are currently being monitored by the film badge service provided by the Comonwealth X-ray and Radium Laboratory, Melbourne.

By the end of the year centres serviced numbered 224, with over 1,000 film wearers.

Doses recorded for the vast majority of wearers continue to be below permissible levels. In a number of centres where these have been found continuously low over a lengthy period, films are now changed at monthly intervals. In no cases, to date, in South Australia is there enough evidence to dispense with film badge monitoring altogether. Investigation of unsatisfactory dose levels continues with appropriate action where necessary.

Agricultural Pesticides.—An investigation was carried out in the Upper Murray Area in 1964, into possible health hazards associated with the use of pesticides, in particular, insecticides of the organic-phosphorus group. Fortnightly visits were made to the main centres in this area and blood samples were collected regularly from users of organic phosphorus sprays for estimation of cholinesterase levels. Inquiries and observations were made in regard to protective clothing worn during spraying operations, the handling and storage of concentrates, and any symptoms experienced as the result of excessive contact with these insecticides. No cases of poisoning were noted; however, numerous reports of minor symptoms were received and many low cholinesterase levels were found. Investigations in this field are to be continued. In addition, several meetings were organized by the Department's medical officer,

during which aspects of safe handling of organic phosphorus insecticides was discussed with the fruitgrowers. A film, obtained from the Shell Company, and which dealt with these aspects, was also shown.

Medical Examinations.—Medical Examinations of applicants for permanent appointment to the South Australian Public Service and to become subscribers to the South Australian Superannuation Fund were carried out by medical officers of the Public Health Supervision Branch. Applicants totalling 708 people were examined and medical reports of a further 219, who were examined by medical practitioners elsewhere in the State, were checked.

In addition, 45 officers of the Department of Mines were examined for medical fitness to carry out surveys in areas of the State where medical attention is not readily available. Seven Harbors Board pilots and 29 applicants for loans from the Housing Loans Redemption Fund, who gave significant medical histories, were also examined.

These medical examinations provide part of an occupational health service for the Government and its employees.

Interstate meetings and conferences.—During the year, Dr. G. H. McQueen, Principal Medical Officer, attended meetings of the Occupational Health Committee of the National Health and Medical Research Council in Melbourne and Sydney, and a meeting of the Radiation Technical and Policy Subcommittee of the Occupational Health Committee in Melbourne.

An Engineering Noise Symposium of the Institute of Mechanical Engineers held in Melbourne on the 21st and 22nd August was attended by Mr. R. G. Stafford, Scientific Officer. The Symposium was attended by 166 delegates, representing industrial and academic institutions throughout Australia, Tasmania, and New Zealand. The guest speaker was Professor E. J. Richards, Director, Sound and Vibration Research Institute, University, of Southhampton. The need to educate people in industry, with regard to the noise problem was emphasized throughout the proceedings.

The annual meeting of Scientific Officers engaged in the field of Industrial Hygiene was attended by Mr. G. F. Sweetapple, Scientific Officer, at the School of Public Health and Tropical Medicine, University of Sydney, on 20th and 21st April, 1964. Eleven officers from six States and two Commonwealth Departments were represented. The subjects discussed included field testing techniques and apparatus respiratory protective devices and specific hazardous substances used in industry.

Mr. G. F. Sweetapple, Scientific Officer, attended the annual Technical Conference on Clean Air at the Victorian Department of Public Health in Melbourne, from the 22nd to 24th April, 1964. Present at the conference were 10 officers from State Government Departments and two from the University of Melbourne. In addition to discussion on clean air legislation, emission standards and sampling procedure, some subjects of a research nature were contributed by delegates from the University of Melbourne. A visit was made to an oil refinery.

Advisory Committee on Noise.—During 1964, a Committee was set up to advise the Director-General of Public Health on medical and engineering aspects of the problem of noise. The Committee consists of representatives of the Public Health Branch, the University of Adelaide, Department of Labour and Industry and the consultant audiologist of the Department of Public Health.

The Committee has held regular monthly meetings, considering both local and overseas experiences in noise control and abatement.

(*j*) HEALTH EDUCATION

A large part of the Department's work on Health Education is borne by officers of the Public Health Branch.

During the year, talks supported by films, were given to food handlers at six towns on Eyre Peninsula.

On other occasions, films were shown to local boards of health and other interested organizations.

Assistance was given with field days for medical students of the University of Adelaide and to public health students of the Education Department.

An exhibit was arranged and provided for a display on health and social services in David Jones' Gallery.

Royal Society of Health.—Examinations for diplomas and certificates of the Royal Society of Health are conducted by the Society's Board of Examiners in South Australia.

Courses are conducted by the Adult Education Section and the Technical Correspondence School of the Education Department.

Material for the courses is prepared and corrected by the Chief Inspector and Senior Inspector of the Branch. Officers of the Branch arrange for the necessary practical work prior to the examinations.

At the examinations held in Adelaide in November, no diplomas were issued for Public Health Inspection. The six candidates who sat for the Diploma of Meat and Other Foods Inspection were successful.

News Letters and "Good Health".—Monthly news letters prepared by the Principal Medical Officer, and the magazine *Good Health,* issued by the Department, were again used as a means of disseminating information on public health matters.

Reference was made in each news letter to items of current public health interest. A list of diseases reported to the Central Board of Health and local boards of health each month was also given.

Items of interest referred to in newsletters and circulars during the year included immunization, influenza, typhoid fever, reconstituted milk, pet meat, clean air, use of methyl chloride in refrigerators, quarterly meetings of health and food inspectors.

3. SCHOOL HEALTH SERVICES

The professional staff at the end of 1964 consisted of the Principal Medical Officer, nine full time medical officers, two part time medical officers (four days per week), one senior dentist, eight dentists, one senior sister, ten sisters, nine dental assistants, one audiologist (9/10) time, one consultant audiologist (1/10) time, and two audiometristes.

An important programming change was made at the beginning of 1964. Previously, to maintain the policy of an examination for each child every three years, schools in the metropolitan area and within a 25 mile radius of the Adelaide G.P.O. were visited annually and children in Infant and Grade I, Grade IV, Grade VII, 2nd year High School and 4th year High School were examined. The annual visit has the two advantages of enabling all children to be seen in their first year at school and allowing absentees, transfers, special cases and recalls to be seen within a reasonable time. Schools in the remainder of the State were visited every third year and all children examined at each visit.

In 1964 the annual visit area was extended to approximately 60 miles from the Adelaide G.P.O., the boundary being a line drawn from Port Wakefield to Swan Reach and the River Murray to Goolwa, plus five country centres, Mount Gambier, Port Pirie, Port Augusta, Whyalla and Port Lincoln.

Because of the distribution of schools in South Australia, it is estimated that nearly two-thirds of the school population is now covered by the annual visit programme.

During the year, the School Health Services lost a valued officer with the death of Dr. Naomi Ryan on 29/7/64. Dr. Ryan was appointed as a School Health Services medical officer on 1/7/51. During her service with the Department she acted as Principal Medical Officer on several occasions in the absence of Dr. Casley Smith. Dr. Ryan spent long periods in the country, often living in the outback for a whole term at a time. Her quiet efficiency and willingness to help endeared her to her colleagues, school staff and children alike.

MEDICAL SERVICES

The number of children examined in State schools was 81,261 in 1964. This figure included 80,430 children seen in schools by medical officers of the School Health Services and 831 children seen in Eyre Peninsula schools by local doctors acting on behalf of this section. The school enrolment in 1964 was 199,513. To achieve the aim of an examination for each child every three years, it is necessary to see at least one third of the total enrolment each year. In 1964, this figure of one third has been exceeded. Medical officers of the Department visited 337 schools during the year and Eyre Peninsula doctors visited five schools.

The parents of 63 children requested that their children be exempted from medical examinations.

The following table (Table 6) shows the number of schools visited, children examined and defects noticed by medical officers of the School Health Services:

TABLE 6

	Metropolitan	Country	Total
Schools visited	152	189	341
Children examined	58,927	22,334	81,261
Defects found—			
Vision (excluding spectacles)	4,719	1,901	6,620
Wearing spectacles	5,061	1,354	6,415
Hearing	1,876	621	2,497
Nose and Throat	664	320	984
Teeth (excluding children under dental treatment)	5,758	3,093	8,851
Heart	408	141	549
Skin	1,208	264	1,472
Lungs	137	63	200
Epilepsy	83	36	119
Allergies	2,927	1,093	4,020
Other conditions, including leg deformities, cerumen, colour blindness and enuresis	5,822	2,125	7,947
Total defects recorded	28,663	11,011	39,674

TABLE 6A—A COMPARISON OF THE PAST THREE YEARS

	1962	1963	1964
Schools visited	258	333	341
Children examined	69,093	77,943	81,261
Defects found—			
Vision (excluding spectacles)	4,243	5,696	6,620
Wearing spectacles	4,512	5,066	6,415
Hearing	1,453	2,387	2,497
Nose and throat	778	1,092	984
Teeth (excluding children under dental treatment)	11,642	11,707	8,851
Heart	357	368	549
Skin	1,272	1,356	1,472
Lungs	175	204	200
Epilepsy	75	100	119
Allergies	2,750	4,189	4,020
Other conditions, including leg deformities, cerumen, colour blindness and enuresis	7,009	8,395	7,947
Total defects recorded	34,271	40,560	39,674

To enable comparisons to be made with other years, Table 7 shows, for the last seven years, the rates per 10,000 children examined of certain defects formally notified to parents.

TABLE 7—DEFECTS NOTICED PER 10,000 CHILDREN EXAMINED

Year	Vision	Hearing	Nose and Throat	Heart	Allergies	Epilepsy	Teeth*
1958	605	213	166	61	321	10	2,444
1959	776	140	146	60	364	12	2,092
1960	706	233	104	57	476	11	2,059
1961	571	282	119	51	475	11	1,912
1962	615	211	113	52	398	11	1,687
1963	730	306	140	47	537	13	1,500
1964	817	308	121	68	496	15	1,093

*This figure does not represent the total dental decay rate

These were children examined by medical officers who had sufficient dental decay present to warrant the issuing of a dental notice. Children already under private dental supervision and children who were examined by departmental dentists are not included.

Eyre Peninsula Scheme.—Doctors residing at two centres on Eyre Peninsula assisted the School Health Services by examining children attending school in their areas. Eight hundred and thirty-one children attending five schools were examined.

TABLE 8.—EYRE PENINSULA SCHEME

Schools visited	5
Children examined	831
Defects formally notified—	
Vision (excluding spectacles)	37
Wearing spectacles	40
Hearing	5
Nose and throat	26
Teeth	65
Heart	4
Skin	7
Lungs	12
Allergies	13
Epilepsy	1
Other conditions (not classified)	63
	273

Examinations carried out by School Health Services staff at 169 *Rundle Street, Adelaide.*—

(1) *Medical Examinations of School Children seen previously at school.*—Children may be asked to attend head office for further assessment of a particular defect before being referred on to their family doctor, hospital or eye specialist. Teachers and parents occasionally bring children to head office for advice and assessment of a particular problem. During 1964, 183 children were seen for visual assessment and three children seen for cardiac assessment (including electrocardiograms).

(2) *Medical Examinations Apart from School Children.*—3,396 students entering or leaving the Teachers Colleges or applying for Leaving and Leaving Honours Teaching Scholarships, Junior Teaching positions, and Laboratory Assistantships, were medically examined in 1964. Teachers referred by the Education Department were seen before returning to duty from sick leave. Applications from teachers for invalidity pensions referred by the Education Department were considered and, where necessary, the applicants were examined. Direct entrants to the service were examined. A total of 639 teachers were seen during 1964. Fifty children travelling interstate with cricket, basketball and football teams were medically examined. Examinations were also undertaken for 104 female public servants seeking permanent appointment or superannuation. Total examinations were 4,189.

Health Education Lectures.—A new programme was instituted in 1964. Wattle Park Teachers College appointed a full time Physical Education Lecturer to share the Health Education lectures with the Physical Education Lecturer already on the staff. Dr. C. O. Fuller was then able to spend one term in each college giving a series of ten special lectures for that term, viz.:—

1st Term—Western Teachers College, 8 lectures/week.

2nd Term—Adelaide Teachers College, 8 lectures/week.

3rd Term—Wattle Park Teachers College, 6 lectures/week.

Dr. Fuller set and marked one question in the final examination paper for each college.

Dr. Fuller continued lecturing on the Nurses Lecture Panel at the Royal Adelaide Hospital and Adelaide Children's Hospital in Community Health, and Dr. P. B. Sprod commenced a series of lectures to mental nurse trainees at Parkside and Hillcrest.

Paediatric Refresher Course.—Permission was granted for Medical Officers to attend the Paediatric Refresher Week at the Adelaide Children's Hospital. Four officers attended.

Mothers' Clubs.—There were a number of requests for speakers at Mothers' Clubs and School Welfare Clubs. Twelve metropolitan and country clubs were addressed by medical officers and dentists of the Branch.

Follow-up Work.—This was continued by the School Nurse detailed for this work who was assisted from time to time by the senior nurse.

Seventy-four metropolitan schools were visited once. Eight of these schools were visited a second time. Nine home visits were made.

74 schools were visited.

3,283 children had received attention.

515 children had received no attention.

Defect Notices.—Under an arrangement approved by the Australian Medical Association, 2,825 forms S.H.S. 5 were returned by doctors and specialists to whom children were taken by parents. Their co-operation is gratefully acknowledged as it enables this section to complete their records and follow the progress of these children.

S.H.S. 5 forms returned—

Metropolitan, 2,102.

Country, 723.

Infections in School Children.—The numbers of communicable diseases reported to teachers in State schools are shown in Table 9.

TABLE 9

Year	Diphtheria	Scarlet Fever	Measles	Rubella	Whooping Cough	Chicken Pox	Mumps	Polio-myelitis	Infective Hepatitis	Other Conditions
				COMMUNICABLE DISEASES						
1960	—	163	3,707	68	117	1,588	2,436	—	387	85
1961	1	130	766	67	51	2,438	461	1	359	113
1962	—	171	4,494	686	91	1,804	962	2	107	49
1963	—	172	1,444	826	218	2,607	4,750	—	59	99
1964	1	200	2,488	985	54	1,997	1,618	—	85	85
				CUMMUNICABLE DISEASES PER 10,000 CHILDREN ENROLLED						
1960	—	9.5	218.0	4.0	6.9	93.4	143.2	—	22.6	4.9
1961	—	7.4	43.2	3.7	2.9	137.7	26.0	—	20.3	6.4
1962	—	9.3	244.0	37.3	4.9	98.0	52.3	—	5.8	2.7
1963	—	9.1	73.9	43.5	11.5	137.2	250.0	—	3.1	5.2
1964	—	10.0	124.8	49.2	2.7	99.8	80.9	—	4.3	4.3

The total number of these communicable diseases reported was 7,513

DEAFNESS GUIDANCE CLINIC

The Deafness Guidance Clinic completed its sixth year with a total of 2,336 attendances.

New cases were referred from the following sources—

	Per cent
Officers of the School Health Services	77.1
Family Doctors	9.1
Parents	5.1
Others (Kindergarten Union, Teachers, Psychology Branch and others)	8.7

The liaison with the Education Department through the Advisory Panel for Deaf and Hard of Hearing Children has been maintained.

The monthly lists of all children discovered to have a significant loss have been continued and 336 were made the subject of specific letters. Of these 201 were discovered at the initial test.

In addition to children seen, tests were carried out on student teachers, scholarship applicants and public servants.

Audiometric Testing.—Audiometric testing was conducted in State and private schools and pre-school kindergartens associated with the Kindergarten Union of South Australia Incorporated by the audiometristes. A total of 14,375 children had pure tone audiometer tests. 751 were found to have some hearing loss at the time of testing. Parents were notified accordingly and arrangements were made, where possible, for further tests by the Deafness Guidance Clinic in the sound proof room. Programming was arranged so that no duplication with testing by school nurses occurred.

The percentage of defects found was—

	Per cent
Audiometristes	5.2
School nurses	3.0

Audiometers supplied and maintained by the Commonwealth Acoustic Laboratory are used for all field work.

Appointments at Deafness Guidance Clinic.—2,336 children were seen by appointment at the Clinic, but an additional 520 appointments were made and not kept. This includes new cases and retests.

TABLE 10—ATTENDANCES AT THE DEAFNESS GUIDANCE CLINIC

NEW CASES

	Male	Female	Total
Pre-school—			
Metropolitan	30	21	51
Country	7	3	10
Primary School—			
Metropolitan	531	377	908
Country	129	92	221
Secondary School—			
Metropolitan	85	65	150
Country	9	7	16
Government Departments and others	36	18	54
Totals	827	583	1,410

RETESTS

	Male	Female	Total
Pre-school—			
Metropolitan	12	9	21
Country	2	1	3
Primary School—			
Metropolitan	340	262	602
Country	80	58	138
Secondary School—			
Metropolitan	81	53	134
Country	10	2	12
Government Departments	12	4	16
Totals	537	389	926

Following attendance at the Clinic, cases are either referred to family doctors, specialists or hospitals; or discharged as having no significant hearing loss; or requested to return for further testing before final assessment.

TABLE II.—DISPOSAL.

New Cases.		Retests.	
Referred to Family Doctors	601	Referred to Family Doctors	295
Referred to Specialists or Hospitals	132	Referred to Specialists or Hospitals	71
Returning for further testing	348	Returning for further testing	401
Discharged	329	Discharged	159

DENTAL SECTION

Seven school dentists remained on strength after the middle of January when three dental officers resigned to undertake further study and experience overseas. These three, Messrs. Symons, Miller and Kingston were replaced by one graduating student, Mr. Wainwright, who raised the number of dentists to eight.

Areas treated, or part treated, during the year were:—

Ceduna	Riverton
Wudinna	Kingscote
Kimba	Lucindale
Booleroo Centre	Pinnaroo

During the year, Streaky Bay School received treatment for a short period, the Senior Dentist spent some time in the Leigh Creek area, and Miss Freestun, who worked in the Booleroo Centre area for the first half of the year, was transferred to work in Children's Welfare Institutions. This has allowed treatment of children in these Institutions to be brought up to date.

The number of studentships offered was increased to 15.

Summary of Work for the Year.

In country schools—

Children examined	5,749
Children offered treatment	3,909
Children accepting treatment	3,325
Fillings inserted	16,552
Extractions	1,732
Other treatments	5,625
Number of visits for treatment	11,633
Numbers of schools visited	45

Approximately 230 pre-school children, secondary school children and adults were treated for emergencies outside school hours. This additional service does much to further the excellent relationships that exist between our dentists and the people in areas where they are working.

A number of requests were received by the Department for a service in areas not yet covered, and these will be a basis for future planning. The overall percentage of children who accept treatment has increased from 78.1 per cent last year to 85.0 per cent this year and this has increased the dentists' work load in some areas.

Average treatments required per child overall were as follows, the table showing a comparison with figures of 1963:—

	1963	1964
Fillings	4.8	4.2
Extractions	.8	.4
Other	1.4	1.4

In Children's Welfare Institutions.—Work was continued in Children's Welfare Institutions during school holidays, and by Miss Freestun during the second half of the year.

Children's Welfare Institutions treated were:—

Magill Reformatory	Vaughan House
Bedford Park	Lochiel Park
Struan Farm	Seaforth Home
Glandore Boys' Home	

Summary of work done in Childrens' Welfare Institutions:—

Children examined	367
Children offered treatment	367
Children accepting treatment	367
Fillings inserted	1,826
Extractions	273
Other treatments	610
Number of visits for treatment	1,119
Number of institutions visited	7

Average treatments required per child were as follows:—

Fillings	5.0
Extractions	.7
Other	1.7

Surveys.—No surveys were conducted this year due to the fact that the senior dentist was occupied in the Far North endeavouring to maintain treatment of children already begun in 1963.

4. POLIOMYELITIS BRANCH

ADMINISTRATION AND PERSONNEL

In 1964, a number of changes occurred in the Poliomyelitis Branch. The new buildings had been in use for the full year and this increase in space has been most beneficial. It is now possible to give all injections within the main building so that the caravan previously used for this is now reserved for sterilizing equipment and visits to other establishments.

Because of the success of the Salk campaign, the number of cases of poliomyelitis has fallen dramatically. This has been reflected in the amount of rehabilitation work. Few new patients were coming forward and the satisfactory results achieved over the years in others made it possible to discontinue this service altogether, and to transfer those patients remaining to other centres for their treatment. From time to time, inquiries are made by former patients, or new patients seeking treatment, but these are few and alternative arrangements are made.

In April, Salk vaccine was released for use by private doctors among their patients. This has been an innovation which has caused some alteration in the general pattern of immunization procedure. Details relating to this change are given below.

In July, Dr. R. R. Horton, who had been in charge since before the inception of the salk campaign, resigned to take another appointment, and Dr. B. H. Jeanes was appointed Principal Medical Officer. Since his appointment, Dr. Jeanes has visited Melbourne to study the manufacture of Salk vaccine, and in November, went to Tasmania to observe the use of Sabin oral vaccine amongst the school children there.

CASES REPORTED

Only two cases of poliomyelitis were reported in 1964 (11 in 1963).

TABLE 12

Case No.	Sex	Age	Specimens Taken	Virus Isolated	Doses of Salk received
1	Male	48 years	Yes	No	0
2	Male	12 years	Yes	No	3

Neither of these cases was finally considered to be due to poliomyelitis, and in 1964, for the first time in over 20 years, no case of poliomyelitis occurred in South Australia. In association with Case No. 1, which occurred in a country town, a study was undertaken among children attending kindergarten in the town. With the co-operation of the mothers, faecal specimens were obtained from 31 children and blood specimens from seven in whom the faecal specimens had given some indication of virus growth. From only one of these children was a virus (coxsackie A9) finally isolated. The final result, while not dramatic, was reassuring in that poliomyelitis virus was not circulating in that particular community at the time. Polomyelitis virus was not isolated from any source in South Australia during 1964.

ADMINISTRATION OF VACCINE

Injections are now given by four main agencies. A tabular summary of the work performed by them is given in Table 13.

TABLE 13—POLIOMYELITIS IMMUNIZATION INJECTIONS GIVEN IN THE YEAR ENDING 31ST DECEMBER, 1964, BY VARIOUS AGENCIES—IN APPLICANTS' YEARS OF BIRTH AND IN FIRST, SECOND, THIRD AND FOURTH INJECTIONS

Year of Birth	Poliomyelitis Services				Local Boards of Health				Hospitals and other Authorities				Private Doctors				Total			
	1st	2nd	3rd	4th+	1st	2nd	3rd	4th +	1st	2nd	3rd	4th+	1st	2nd	3rd	4th+	1st	2nd	3rd	4th +
1964	271	175	—	—	3,038	1,864	2	—	45	19	—	—	1,674	1,198	5	—	5,028	3,256	7	—
1963	840	879	380	6	9,216	9,639	4,708	93	178	168	49	7	1,672	1,587	368	18	11,906	12,273	5,505	124
1962	207	245	481	156	1,512	1,991	6,746	2,293	44	55	106	49	357	324	307	280	2,120	2,615	7,640	2,778
1961	112	100	197	376	601	713	1,668	4,741	17	16	24	75	210	181	168	422	940	1,010	2,057	5,614
1960	114	95	134	340	423	498	916	3,412	13	13	21	59	141	140	126	403	691	746	1,197	4,214
1959	78	73	93	354	448	523	736	2,863	5	7	18	46	112	100	85	385	643	703	932	3,648
1958	68	57	91	277	455	454	555	2,595	6	5	13	39	60	57	52	294	589	573	711	3,205
1957	44	43	69	256	378	400	427	2,372	7	5	10	30	63	59	38	274	492	507	544	2,932
1956	42	39	62	255	314	346	400	2,222	6	5	6	28	31	35	16	258	393	425	484	2,763
1955	44	36	46	234	249	259	327	1,891	6	5	9	14	32	33	18	234	331	333	400	2,373
1954	30	35	39	245	225	225	350	1,880	5	4	8	12	22	29	18	252	282	293	415	2,389
1953	40	37	43	214	213	238	320	1,756	—	3	5	11	19	17	15	205	272	295	383	2,186
1952	40	35	27	222	208	238	355	1,754	2	3	4	8	14	18	14	196	264	294	400	2,180
1951	23	25	31	215	130	136	219	1,146	1	1	4	7	16	14	14	157	170	176	268	1,525
1950	29	31	25	205	76	90	143	973	2	2	2	8	8	14	5	189	115	137	175	1,375
1949	32	28	27	191	43	50	95	750	1	—	3	8	5	5	6	151	81	83	131	1,100
1948	25	21	22	191	40	35	50	714	—	—	4	9	5	4	6	158	70	60	82	1,072
1947	34	30	24	223	26	27	64	604	3	3	8	120	3	2	11	146	66	62	107	1 093
1946	35	29	19	248	19	23	44	494	16	16	12	543	6	3	4	144	76	71	79	1,429
1945	22	22	16	219	23	17	16	355	19	21	16	303	13	8	7	117	77	68	55	994
1944	31	20	19	198	32	34	29	324	32	28	29	202	18	13	11	105	113	95	88	829
1943	31	26	18	208	38	40	45	353	23	25	48	145	34	29	9	108	126	120	120	814
1942	66	55	43	187	111	104	92	422	28	28	45	117	36	34	18	113	241	221	198	839
1941	89	84	70	127	169	183	200	446	36	42	50	100	59	57	32	114	353	366	352	787
1940	111	89	68	187	191	172	210	602	29	36	56	49	69	66	39	99	400	363	373	937
1939	69	77	73	152	221	217	246	704	20	23	48	62	57	57	35	105	367	374	402	1,023
1938	83	87	91	166	195	193	265	709	28	28	31	46	62	59	32	143	368	367	419	1,064
1937	84	68	71	157	181	212	285	786	18	13	21	49	71	57	32	154	354	350	409	1,146
1936	95	74	68	185	170	184	226	792	20	22	19	44	53	57	42	119	338	337	355	1,140
1935	96	89	60	168	137	146	221	737	9	12	15	42	49	42	43	116	291	289	339	1,063
1934	92	96	58	156	145	155	201	734	9	11	8	41	37	33	29	126	283	295	296	1,057
1933	61	56	42	138	133	155	208	769	7	5	10	52	52	46	33	124	253	262	293	1,083
1932	72	60	56	143	111	131	218	743	9	7	6	35	40	37	29	119	232	235	309	1,040
1931	81	70	51	175	129	132	182	737	7	7	11	52	27	24	22	123	244	233	266	1,087
1930	70	57	56	175	112	119	185	820	12	12	17	43	43	45	27	135	237	233	285	1,173
1929	69	68	57	195	90	93	170	827	12	9	10	54	33	29	11	130	204	199	248	1,206
1928	72	73	65	183	101	103	130	759	13	8	12	52	38	31	18	133	224	215	225	1,127
1927	82	64	36	176	104	99	140	768	7	11	12	59	38	34	21	128	231	208	209	1,131
1926	87	68	48	173	87	97	126	738	10	8	7	44	35	32	17	112	219	205	198	1,067
1925	90	81	42	154	79	93	113	674	13	10	5	56	17	28	13	114	199	212	173	998
1924	78	70	50	147	76	75	135	636	8	3	8	55	31	27	21	101	193	175	214	939
1923	71	64	32	150	54	63	124	593	9	9	8	62	36	35	12	104	170	171	176	909
1922	61	68	45	132	67	68	100	540	9	10	6	50	32	31	14	84	169	177	165	806
1921	64	63	35	141	65	61	90	479	10	6	9	35	31	34	9	87	170	164	143	742
1920	72	64	31	139	77	81	87	440	11	11	7	51	28	27	10	86	188	183	135	716
1919	78	59	28	109	52	47	60	364	9	8	9	27	19	15	10	46	158	129	106	546
1918	70	56	29	92	41	38	52	293	10	9	7	30	21	17	8	72	142	120	96	487
1917	68	57	18	95	30	29	38	256	5	5	5	23	23	24	8	42	126	115	69	416
1916	73	67	23	91	51	43	50	302	9	5	3	34	31	27	7	44	164	142	83	471
1915	70	59	16	92	48	41	41	276	3	3	9	23	19	17	5	28	140	120	71	419
1914	92	84	19	67	56	54	56	248	6	4	2	27	31	29	3	33	185	171	80	375
1913	71	68	20	67	66	66	53	246	6	7	5	12	39	38	4	17	182	179	82	342
1912	83	75	15	56	90	77	79	252	3	5	3	12	32	32	5	16	208	189	102	336
1911	88	82	25	56	59	65	62	225	3	2	3	7	31	31	2	11	181	180	92	299
1910+	1,325	1,162	149	289	621	575	473	1,205	42	31	31	42	279	246	19	45	2,267	2,014	672	1,581
Total	6,025	5,495	3,453	9,553	21,626	21,811	23,133	52,707	861	814	897	3,210	6,014	5,268	1,933	7,519	34,526	33,388	29,416	72,989

The close approximation of the total number of injections given in 1963 (171,519) and 1964 (170,319) shows that there can be no slackening of activity in the near future. A more detailed description of the activities of the various agencies follows:

1. *Poliomyelitis Services.*

During the year, there has been an expansion of activities and 24,526 injections were given (9,877 in 1963). Injections are given daily at Norwood Headquarters and an evening clinic is held once per week. In July, news that a poliomyelitis virus had been discovered circulating in Melbourne caused such an increase in the demand for vaccination that during the latter half of July and early August extra night clinics were needed.

Visits were made to a number of institutions in the metropolitan area, including Parkside and Hillcrest Hospitals, Weapons Research Establishment Salisbury, Railway Workshops at Islington, the Electricity Trust of South Australia, and the Commonwealth Health Department. In addition, country visits were made to Point McLeay, Wardang Island, Iron Knob and Iron Baron, Coober Pedy and Andamooka, and Aboriginal Reserves and at towns along the Broken Hill line by the General Public Health Branch of the Department.

Late in the year, clinics were established at the Adelaide Children's Hospital and the Queen Victoria Maternity Home. The object of this was to reach a socio-economic group who had not availed themselves of poliomyelitis vaccination. The results obtained have been most gratifying and it is hoped that those people who have begun or completed vaccination at these clinics will obtain a greater appreciation of the need for vaccination not only against poliomyelitis, but against all preventable diseases. A major problem encountered has been the inability of many people presenting at the clinics to speak English. This has been overcome in part by the use of multi-lingual information sheets. Table 14 shows a summary of the work at the two clinics.

TABLE 14

	First	Second	Third	Fourth	Total
Adelaide Children's Hospital, 5th October to 31st December, 1964	750	485	298	1,198	2,731
Queen Victoria Maternity Hospital, 7th December to 31st December, 1964	148	20	27	180	374

The fact that over 25 per cent of the injections given were "firsts" is an indication that these clinics should continue to operate successfully for a prolonged period without any significant drop in numbers attending.

2. *Local Boards of Health.*

The local boards of health continue to contribute the greatest number of the total injections given. The combined total for 1964 was 119,277 injections. This total is a drop of 37,036 on the 1963 total of 156,313 injections. Part of this fall-off in the total is cause for some concern. There is no doubt that the public response to immunization is not as enthusiastic as in the early days of the campaign, when the need for protection appeared more urgent. This need, however, still remains, and it is necessary to increase the percentage of the total population adequately immunized or a re-emergence of the disease is likely. One of the pleasing features is that a number of local boards are concerned with the fall-off in attendance. They are aware that this is a decreased response to the campaign rather than an indication that the population is now adequately immunized and have sought advice about this.

A total of the number of injections given by each local board during 1964 is shown in Table 15.

TABLE 15

	Injections given	
	1964	1963
METROPOLITAN		
Adelaide	700	792
Brighton	1,699	2,083
Burnside	1,816	3,341
Campbelltown	3,180	2,837
Colonel Light Gardens	148	136
Enfield	6,519	8,732
Glenelg	752	952
Henley and Grange	1,327	1,439
Hindmarsh	852	905
Kensington and Norwood	1,723	2,097
Marion	8,493	8,842
Mitcham	2,896	3,629
Payneham	1,895	1,334
Port Adelaide	3,025	5,324
Prospect	1,708	2,045
St. Peters	1,342	1,272
Thebarton	1,120	3,075
Unley	2,229	2,621
Walkerville	187	419
West Torrens	3,768	6,855
Woodville	11,439	13,375
COUNTRY		
Angaston	890	1,462
Balaklava	522	660
Barmera	654	402
Barossa	158	131
Beachport	Carried out by Millicent	Carried out by Millicent
Berri	992	712
Blyth	101	360
Brown's Well	Carried out by Loxton	Carried out by Loxton
Burra Town	398	1,089
Burra Burra	Carried out by Burra Town	Carried out by Burra Town
Bute	26	590
Carrieton	nil	nil
Clare Town	292	Carried out by Clare District
Clare District	Carried out by Clare Town	423
Cleve	408	117
Clinton	Carried out by Yorke Peninsula	Carried out by Yorke Peninsula
Coonalpyn Downs	317	650
Crystal Brook	246	277
Dudley	62	84
East Murray	Carried out by Karoonda and Loxton	Carried out by Karoonda and Loxton
East Torrens Local	355	407
Elizabeth (from 1st July)	2,075	—
Elliston	161	219
Encounter Bay	159	238
Eudunda	240	494
Franklin Harbour	127	452
Freeling	243	147
Gawler	1,651	574
Georgetown	Carried out by Gladstone	Carried out by Gladstone
Gladstone	239	523
Gumeracha	nil	140
Hallett	227	503
Hawker	86	371
Jamestown Town	245	1,207
Jamestown District	Carried out by Jamestown Town	Carried out by Jamestown Town
Kadina Town	579	1,463
Kadina District	Carried out by Kadina Town	Carried out by Kadina Town
Kanyaka	Included in Quorn	Included in Quorn
Kapunda Town	Included in Kapunda District	Included in Kapunda District
Kapunda District	551	690
Karoonda	141	568
Kimba	289	407
Kingscote	483	177
Lacepede	302	766

TABLE 15—*continued*

	Injections given	
	1964	1963
Lameroo	473	446
Laura	181	298
Le Hunte	268	230
Lincoln	460	612
Loxton	1,672	876
Lucindale	50	449
Maitland	Carried out by Yorke Peninsula	75
Mallala	375	218
Mannum	412	890
Marne	49	123
Meadows	251	1,252
Meningie	560	1,627
Millicent	1,048	1,491
Minlaton	417	321
Mobilong	Included in Murray Bridge	Included in Murray Bridge
Moonta	123	262
Morgan	113	288
Mount Barker	557	2,813
Mount Gambier Town	3,152	3,335
Mount Gambier District	Included in Mount Gambier Town	Included in Mount Gambier Town
Mount Pleasant	217	587
Mudla Wirra	161	315
Munno Para	1,271	1,164
Murat Bay	337	728
Murray Bridge	4,065	781
Naracoorte Town	1,122	1,859
Naracoorte District	Included in Naracoorte Town	Included in Naracoorte Town
Noarlunga	1,338	1,419
Onkaparinga	704	1,397
Orroroo	283	397
Owen	369	292
Paringa	Carried out by Renmark	Carried out by Renmark
Peake	155	737
Penola	861	1,508
Peterborough Town	427	668
Peterborough District	Included in Peterborough Town	Included in Peterborough Town
Pinnaroo	264	524
Pirie	Included in Port Pirie	Included in Port Pirie
Port Augusta	1,442	3,789
Port Broughton	261	162
Port Elliot	388	270
Port Germein	209	841
Port Lincoln	1,908	2,472
Port McDonnell	53	453
Port Pirie	2,452	3,042
Port Wakefield	157	306
Quorn	143	359
Redhill	193	137
Renmark Town	3,508	776
Renmark Irrigation Trust	Included in Renmark	Included in Renmark
Riverton	182	308
Robe	43	337
Robertstown	191	296
Saddleworth	320	672
Salisbury (from 1st July)	1,976	7,966
Salisbury (including Elizabeth to 30th June)	3,727	—
Sedan	179	497
Snowtown	121	145
Spalding	Carried out by Clare Town	Carried out by Clare Town
Stirling	552	1,734
Strathalbyn Town	304	1,356
Strathalbyn District	Included in Strathalbyn Town	Included in Strathalbyn Town
Streaky Bay	225	259
Tantanoola	Included in Millicent	Included in Millicent
Tanunda	452	536
Tatiara	996	3,226
Tea Tree Gully	1,696	1,353
Truro	22	132
Tumby Bay	358	1,196
Upper Wakefield	97	215
Victor Harbour	434	1,266
Waikerie	631	743
Wallaroo	322	568
Warooka	87	111
Whyalla Town Commission	1,434	1,824
Willunga	272	806
Wilmington	106	215
Yankalilla	835	102
Yorke Peninsula	978	708
Yorketown	251	685
Total	119,277	156,313

In comparing the activities of the various local boards, it must be realized that total population is only one index, and a study of the age distribution of the population, which in turn reflects the birth rate in the area, has shown that some apparently not very active boards are coping adequately with their needs while a few would appear not to be doing so. It is becoming increasingly difficult to evaluate the situation in a given board now that injections are given by private doctors, because a doctor practising in one local board area may draw many of his patients from another.

3. *Private Doctors.*

Vaccine has been available to medical practitioners for use among their private patients since April, 1964. At the end of the year 146 metropolitan and 59 country doctors (including partnerships) had complied with the requirements for the supply of vaccine.

Delivery of the vaccine is undertaken by Poliomyelitis Services, who visit each doctor in the metropolitan area once a fortnight, and country doctors have the vaccine despatched on request. Of the doctors who had indicated their intention to use vaccine, 19 have not as yet given any injections.

In the main, the scheme has been very successful and to the end of 1964 a total of 20,734 injections were given. There have been problems associated with the scheme and in particular a high rate of wastage of vaccine (see Table 16) by metropolitan doctors. Individual wastage rates of up to 60 per cent have been encountered. The most significant factor contributing to this appears to be doctors ordering on "spec" instead of taking only as much vaccine as is needed for known appointments. A further factor is the need for Poliomyelitis Services to withdraw all vaccine held when a new batch is issued, but this again stems from laxity in ordering. Efforts are being made to reduce this loss.

Recording of injections given is not always meticulous and the follow-up of incomplete returns imposes unnecessary work on the Filing Room Staff. An indication of the extent of this is that 105 doses of vaccine still remain unaccounted for at the end of the year. Once again, efforts are being directed to minimize recording errors. Neither of the above problems applies to any extent with country doctors as their wastage rate is only of the order of 5 per cent and no vaccine remained unaccounted for at the end of the year.

4. *Special Groups.*

Throughout the State, there are a number of agencies of varying constitution who undertake Salk immunization. The recipients are employees, patients, or inhabitants of certain areas. Although the amount of vaccine used by these agencies constitutes just over 3 per cent of the total, their activities represent a valuable contribution to the immunization campaign, and it is felt that by increasing the number of institutions involved and maintaining the activity of those already participating, even greater benefits could be obtained. Although it is not entirely satisfactory to judge the value of the work done by the number of injections given, I feel it is of some value to mention individually three agencies.

By far the most active was the University Health Service (2,150 injections in 1964, and 2,031 in 1963). While that is gratifying on one hand, it is rather disturbing that it is possible to give so many injections among a relatively small group of people, who it is felt would have availed themselves of immunization at an earlier age. Weapons Research Establishment, Woomera, undertakes immunization of all the inhabitants there, and in 1964 a total of 664 injections were given (1,081 in 1963). General Motors-Holden's also carries out immunization of its employees and here 822 injections were given (nil in 1963). None of the other groups exceeded 500 injections, but as five of these are in the far outback and others were relatively small institutions, numbers alone do not indicate the worthy contributions that they made.

Table 16 summarizes the use and wastage of all Salk vaccine issued from Poliomyelitis Services during 1964. It will be noted that the figures do not balance. This is because unused vaccine from several approved users is returned to our stock. This is only done when it is known that all vaccine is kept strictly refrigerated, and is then returned to this Branch in a suitable refrigerated container.

TABLE 16—USAGE AND WASTAGE OF SALK VACCINE IN SOUTH AUSTRALIA IN 1964 BY VARIOUS AGENCIES

	Local Boards of Health	Special Groups	Poliomyelitis Services	Country Doctors	Metropolitan Doctors
Single doses of Salk issued	34,127	4,589	17,918	3,857	22,486
Multiple doses of Salk issued	99,740	1,810	7,000	140	—
Doses Reissued	—	—	—	—	2,264
Total Injections Given	119,277	5,782	24,526	3,759	16,975
Single doses returned	2,895	295	—	199	—
Multiple doses returned	7,950	240	—	nil	—
Single doses wasted	770	45	280	199	415
Multiple doses wasted	3,671	40	122	nil	—
Doses discarded by Poliomyelitis Services	—	—	—	—	2,740
Single doses gained	155	1	5	nil	13
Multiple doses gained	541	3	5	2	—
Doses unaccounted for	nil	1	nil	nil	105

POSITION AT THE END OF 1964

At this time, after 8½ years of the campaign, 1,918,590 injections had been given and may be summarized in Table 17.

TABLE 17

Injection	No. of Injections	Percentage of Population covered, based on June, 1964, estimate
1st	624,062	61
2nd	610,937	59
3rd	535,327	51
4th	148,264	14

The percentages above will of course only be approximate, but statistical discrepancies due to death, migration, etc., make an exact figure impossible to obtain. In the 8½ years of the campaign, most of the deaths have occurred among the older and largely unvaccinated age groups. The vaccination state of those entering and leaving South Australia could reasonably be taken to be equivalent to those remaining in the State, although migrants from the United Kingdom would probably have a somewhat higher percentage of vaccinated people than the rest of the population. This would be offset by a lower immunization rate in migrants from Southern European countries. The net effect of this would be to raise the total percentage covered by somewhere between 5 per cent and 10 per cent.

The complete absence of poliomyelitis in 1964 reflects the efficacy of the Salk vaccine in producing protection not only for the individual, but in giving a very significant degree of protection to those not vaccinated. This "herd effect", as it is called, was originally thought not to be associated with Salk vaccine, but the experience throughout Australia, and statistical studies overseas, show that this effect does exist.

A further pleasing aspect is that no person who has received three or more doses of Salk vaccine in South Australia has been confirmed as having contracted poliomyelitis. This has not been the case in other places, but the disease in vaccinated people has tended to be less severe, particularly from the point of view of residual paralysis. At least part of the success is due to the rigorous control to the vaccine and the insistence of adequate storage facilities, and on return of unused vaccine within a specified period. In this way, only fully potent vaccine is administered and those receiving it therefore have a better antibody response.

CURRENT PROBLEMS

(*a*) *General.*

One of the most disturbing features of the campaign is falling-off in response among the pre-school children While this is in part due to vaccine being unavailable for most of 1961, this situation no longer exists. A study of Table 12 will show that immunization tends to be begun later than the recommended six months of age and to take much longer than the minimum time to be completed. It is felt that should poliomyelitis return to South Australia in a virulent form this age group would suffer severely from its effects.

It may be that the success of the campaign in eliminating poliomyelitis has removed from people's minds the image of the disease as a killer of adults and crippler of young children. If the disease is to remain absent, then continued effort is needed to stimulate all population groups to a higher immunization status.

(*b*) *Problems relating to Poliomyelitis Services.*

The work in the Filing Room has continued to increase somewhat out of proportion with the total number of people immunized. The Filing Room now holds more than 600,000 cards, and although figures are not available for the full year, from August to December 21,098 inquiries were handled and, of these, only 300 cards (1.4 per cent) could not be traced. Although some of these were undoubtedly due to cards which had been misplaced, inadequate recording outside and misconceptions among those applying for injections would constitute at least some of these 300. This is borne out by the fact that in 484 (2.3 per cent) of instances information which was supplied to us was subsequently shown by our records to be wrong. The recording system is providing a valuable service to the public, and is a store of information from which statistics relating to the efficacy of Salk vaccine may be obtained. It is felt that its efficiency is hindered if everybody handling Salk vaccine does not maintain records of an extremely high degree of accuracy. This problem has become increasingly acute with the release of vaccine to private doctors.

Wastage of vaccine imposes a heavy cost on the population in general; some of the wastage is unavoidable, but it is felt that greater economies should be possible.

WORK PROJECTED FOR 1965

It is intended that Poliomyelitis Services should keep the clinics established at Adelaide Children's Hospital and Queen Victoria Maternity Hospital going so that they may serve as centres from which information on immunization may be disseminated. Attempts will be made to reduce the number of pre-school children who remain unvaccinated. It is proposed that visits will be made to all outback areas. A programme to make this possible has been agreed to by the Principal Medical Officer for Public Health and a time table worked out. Liaison will be maintained between Poliomyelitis Services and the institutions previously visited and further institutions visited. Efforts will be needed to decrease wastage of vaccine and investigations undertaken to see if more economic and efficient methods of distributing vaccine are possible.

It is hoped to make personal contact with as many representatives of local boards as is possible so that problems associated with the Salk campaign can be discussed with them. As mentioned above, it is the local boards who provide the backbone for the campaign as they have the ultimate responsibility of maintaining and improving health in their areas.

5. TUBERCULOSIS BRANCH

The number of notifications of new cases of tuberculosis was 177 compared with a total of 214 for 1961, 242 for 1962 and 236 for 1963.

For the past three years the figures for pulmonary and non-pulmonary new cases were as follows:—

Year	Pulmonary	Non-Pulmonary	Total
1962	210	32	242
1963	205	31	236
1964	147	30	177

The marked drop in the pulmonary cases is very gratifying. The morbidity rate (ratio of newly notified cases to each 100,000 of the population) was 18.0. This compares very favourably with the other States, such as Western Australia (26.6) where tuberculosis control is said to be very satisfactory. However there is no known reason for the sudden drop and next year we may find that the figure has risen again.

Table 18 shows the source of all new notifications and it will be seen that 27 per cent of the cases were found by mass miniature radiography and 28 per cent by general practitioners.

TABLE 18—SOURCE OF NOTIFICATIONS FOR THE YEAR ENDING 31ST DECEMBER, 1964

Source	Pulmonary Cases		Non-pulmonary Cases		Total Cases
	No.	Per Cent	No.	Per Cent	
Mass Community Surveys	40	27.21	—	—	40
Private Medical Practitioners—					
(*a*) Direct	15	10.21	13	43.3	28
(*b*) *Via* Chest clinic	23	15.64	2	6.7	25
General hospitals	25	17.01	14	46.7	39
Chest hospitals, annexes and sanatoria	—	—	—	—	—
Chest clinics	8	5.44	1	3.3	9
Repatriation clinics and hospitals	3	2.04	—	—	3
Death certificates	3	2.04	—	—	3
Special Groups—					
(*a*) Mental hospital surveys	—	—	—	—	—
(*b*) Gaol surveys	1	.68	—	—	1
City Static Unit—					
Contacts 4					
Migrant compulsory survey 5					
Volunteers 6					
Student teachers 1	29	19.73	—	—	29
University health service 1					
Contacts of +ve Mantoux school children 2					
Inactive previous mass surveys—re-X-rayed 10					
Total Notifications (Transfers-in not included)	147	100.0	30	100.0	177

Although more doctors used the static unit—6,095 for 1964 as against 5,376 for 1963—the rate of case finding for this important group dropped from three per one thousand in 1963 to only one per one thousand in 1964.

Table 19 shows the age, sex and stage of disease.

Table 20 shows the details concerning those cases regarded as reactivated. A reactivated case is one which has previously been notified and entered on the active case register but removed three years after the cessation of chemotherapy.

It will be noted that there were only six such cases and the probability is that some of these would not have occurred if the patients concerned had been more diligent with the taking of their chemotherapy.

Tables 21 and 21a show the local board of health origin of these cases.

Migrants.—There were thirteen cases notified in migrants within five years of arrival compared with sixteen for 1963 and nineteen for 1962. Table 22 shows the country of origin. Thirty-one per cent of all notified cases in 1964 occurred in migrants.

Mortality.—There were only thirteen deaths from tuberculosis, the lowest on record. The fall in the mortality rate over the last few years is:—

Year	Deaths per 100,000
1958	6.6
1959	5.4
1960	4.0
1961	5.0
1962	3.6
1963	2.7
1964	1.3

Table 23 shows details of deaths in 1964 by age and sex.

Tuberculosis Allowance.—As pointed out last year, the number of persons in receipt of the special tuberculosis benefit is a fairly accurate index of tuberculosis control. The 1964 figure again shows considerable improvement. The comparative figures over the past few years are as follows:

TABLE 19—NOTIFICATIONS OF TUBERCULOSIS FOR YEAR ENDED 31ST DECEMBER, 1964

New Active and Probably Active Cases—Showing Age, Sex and Stage of Disease

Age Group	Males						Females						Persons							
			Pulmonary						Pulmonary						Pulmonary					
	Primary	Pleurisy with Effusion	Min.	Mod. Adv.	Adv.	Non-Pulmonary	Primary	Pleurisy with Effusion	Min.	Mod. Adv.	Adv.	Non-Pulmonary	Primary	Pleurisy with Effusion	Min.	Mod. Adv.	Adv.	Non-Pulmonary	Total Persons	Per Cent of each Age Group
0- 4	1	—	—	—	—	3	—	—	—	—	—	1	1	—	—	—	—	4	5	2.8
5- 9	1	—	1	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	2	1.13
10-14	—	—	1	—	—	—	—	—	1	—	—	—	—	—	2	—	—	—	2	1.13
15-19	—	—	1	1	—	1	—	1	1	1	—	—	—	1	2	2	—	1	6	0.3
20-24	—	—	4	3	—	1	—	—	1	—	—	1	—	—	5	3	—	2	10	5.7
25-29	—	1	5	2	1	1	—	—	3	2	1	2	—	1	8	4	2	3	18	10.2
30-34	—	—	5	2	1	—	—	—	3	1	—	1	—	—	8	3	1	1	13	7.35
35-39	—	—	2	3	—	1	—	—	—	3	1	1	—	—	2	6	1	2	11	6.2
40-44	—	—	2	7	4	2	—	—	1	1	—	3	—	—	3	8	4	5	20	11.3
45-49	—	—	3	6	—	1	—	—	1	4	—	—	—	—	4	10	—	1	15	8.5
50-54	—	1	3	11	2	1	—	—	—	2	—	3	—	1	3	13	2	4	23	12.99
55-59	—	—	2	6	1	—	—	—	2	2	—	—	—	—	4	8	1	—	13	7.34
60-64	—	—	1	4	3	4	—	—	1	1	—	1	—	—	2	5	3	5	15	8.5
65-69	—	—	1	6	—	—	—	—	—	—	—	—	—	—	1	6	—	—	7	3.95
70-74	—	—	1	4	—	1	—	—	—	2	—	—	—	—	1	6	—	1	8	4.51
75 and over	—	—	2	2	2	—	—	—	—	2	—	1	—	—	2	4	2	1	9	5.1
N/S	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	2	2	34	57	14	16	—	1	14	21	2	14	2	3	48	78	16	30	177	100.0

TABLE 20—RE-ACTIVATED CASES OF TUBERCULOSIS FOR YEAR ENDED 31ST DECEMBER, 1964

SHOWING AGE, SEX AND STAGE OF DISEASE

Age Group	MALES				FEMALES				PERSONS				
	Min.	Mod. Adv.	Adv.	Non-Pul-monary	Min.	Mod. Adv.	Adv.	Non-Pul-monary	Min.	Mod. Adv.	Adv.	Non-Pul-monary	Total Persons
0- 4	—	—	—	—	—	—	—	—	—	—	—	—	—
5- 9	—	—	—	—	—	—	—	—	—	—	—	—	—
10-14	—	—	—	—	—	—	—	—	—	—	—	—	—
15-19	—	—	—	—	—	—	—	—	—	—	—	—	—
20-24	—	—	—	—	—	—	—	—	—	—	—	—	—
25-29	—	—	—	—	—	—	—	—	—	—	—	—	—
30-34	—	—	—	—	1	—	—	—	1	—	—	—	1
35-39	—	—	—	—	2	—	—	—	2	—	—	—	2
40-44	—	—	—	—	—	—	—	—	—	—	—	—	—
45-49	—	—	—	—	—	—	—	—	—	—	—	—	—
50-54	—	—	—	—	1	—	—	—	1	—	—	—	1
55-59	—	—	—	—	—	—	—	—	—	—	—	—	—
60-64	—	1	—	—	—	—	—	—	—	1	—	—	1
65-69	—	—	—	—	—	—	—	—	—	—	—	—	—
70-74	—	—	—	—	—	—	—	—	—	—	—	—	—
75 and over	—	1	—	—	—	—	—	—	—	1	—	—	1
N/S	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	2	—	—	4	—	—	—	4	2	—	—	6

Year	Persons receiving tuberculosis allowance during the year
1961	171
1962	148
1963	133
1964	101

Greater detail concerning the year 1964 is shown in Table 24.

Mass Miniature Radiography.—In 1964 the numbers of persons X-rayed by 70 m.m. radiography and the numbers of active cases per thousand are shown in Table 25 and further details are given in Tables 26, 27, 28 and 29. Forty cases were discovered last year by this method. Mass miniature radiography entails a great deal of work for very poor returns but if we are to eradicate tuberculosis from our society, the fewer the cases become the harder they will be to find. The patients that the surveys discover are usually either those who are tardy about seeking medical help or do not consider they have need to do so. If missed their disease is liable to become very infectious before treatment is instituted.

What has become apparent is that the yield of active cases in the fifteen to twenty year old group is low.

Over the last three years the new pulmonary cases in this group, the percentage of all new cases at all ages, and the numbers found by mass miniature radiography are shown below:

15-20 YEAR GROUP

Year	New Cases	Percentage of Total %	No. found by M.M.R.
1962	5	2.7	1
1963	10	6.1	1
1964	6	3.3	—

Attendances at the Chest Clinic and Contact Clinic are shown in Tables 30 and 31.

Further statistical information is given in Tables 32 to 35.

TABLE 21—PULMONARY TUBERCULOSIS—LOCAL BOARD OF HEALTH ORIGIN

METROPOLITAN Local Board Area	Notifications
Adelaide	8
Brighton	1
Colonel Light Gardens	1
East Torrens County Board	10
Enfield	6
Glenelg	1
Henley and Grange	5
Hindmarsh	4
Marion	4
Mitcham	3
Port Adelaide	12
Prospect	5
Thebarton	4
Unley	5
Walkerville	1
West Torrens	11
Woodville	21
Seamen (No Local Board)	3
	105

COUNTRY Local Board Area	Notifications
Andamooka Out District	1
Angaston	1
Berri	1
Blyth	1
Crystal Brook	1
Elizabeth	5
Eudunda	1
Le Hunte	1
Loxton	2
Mannum	1
Minlaton	1
Morgan	1
Mount Gambier Town	1
Munno Para East	1
Murat Bay	1
Naracoorte Town	1
Noarlunga	1
Port Augusta	1
Port Lincoln	1
Port Pirie	4
Salisbury	4
Tea Tree Gully	4
Wallaroo	1
Whyalla	5
	42

TABLE 21A—NON PULMONARY TUBERCULOSIS—LOCAL BOARD OF HEALTH ORIGIN

Metropolitan		Country	
Local Board Area	Notifications	Local Board Area	Notifications
Adelaide	2	Clare	1
East Torrens County Board	4	Meningie	1
Enfield	5	Millicent	1
Marion	2	Renmark Town	1
Mitcham	1	Whyalla	1
Port Adelaide	3		5
Thebarton	2		
Unley	2		
West Torrens	1		
Woodville	3		
	25		

TABLE 22—NOTIFICATION OF MIGRANTS IN SOUTH AUSTRALIA FOR YEAR ENDING 31st DECEMBER 1964

Arrival in Australia	British				Non-British			
	Assisted	Non-Assisted	Total	Per Cent of Total Notified Migrants	Assisted	Non-Assisted	Total	Per Cent of Total Notified Migrants
				Per Cent				Per Cent
Within 1 year	1	—	1	2	2	—	2	4
Within 5 years	5	—	5	9	2	3	5	9
Within 10 years	2	1	3	5	5	5	10	18
Over 10 years	6	2	8	15	18	3	21	38
	14	3	17	31	27	11	38	69

Country of Origin

	Assisted	Non-Assisted
England	10	2
Scotland	4	1
Austria	2	—
Bulgaria	1	—
China	—	1
Czechoslavakia	1	—
Estonia	1	—
Finland	—	1
Germany	2	1
Greece	1	1
Holland	2	1
Hungary	1	—
Italy	2	5
Latvia	3	—
Poland	3	—
Russia	2	—
Singapore	—	1
Ukraine	2	—
Yugoslavia	4	—
	41	14

Assisted Migrants 41 (75 per cent)
Non-Assisted Migrants 14 (25 per cent)
Migrants comprised 31 per cent of all notified cases which totalled 177.

TABLE 23—DEATHS FROM TUBERCULOSIS (ALL FORMS) FOR YEAR ENDING 31st DECEMBER, 1964

Age at Death	Male	Female	Total
25-29 years	—	1	1
30-34 years	—	—	—
35-39 years	—	—	—
40-44 years	1	—	1
45-49 years	—	1	1
50-54 years	2	—	2
55-59 years	—	1	1
60-64 years	2	—	2
65-69 years	1	—	1
70-74 years	1	—	1
75 and over	2	1	3
	9	4	13

TABLE 24—PERSONS RECEIVING TUBERCULOSIS ALLOWANCE FOR YEAR ENDED 31ST DECEMBER, 1964

LOCATION OF PATIENTS

Receiving Treatment in Institution			Receiving Treatment Outside Institution			Total Persons Receiving Treatment		
Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
45	7	52	40	9	49	85	16	101

PERIOD IN RECEIPT OF ALLOWANCE

Period	Males	Females	Persons
Under 1 year	53	12	65
1-2 years	7	4	11
2-3 years	4	—	4
3-4 years	1	—	1
4-5 years	3	—	3
Over 5 years	17	—	17
Totals	85	16	101

TABLE 25—NUMBERS X-RAYED BY 70mm. RADIOGRAPHY AND RATES PER THOUSAND

Year	METROPOLITAN			COUNTRY			STATIC			TOTAL		
	Numbers	Active	Per 1,000	Numbers	Active	Per 1,000	Numbers	Active	Per 1,000	Numbers	Active	Per 1,000
1962	89,743	14	.15	51,687	11	.21	19,769	18	.91	161,199	43	.26
1963	60,200	11	.18	55,843	23	.41	32,034	28	.90	147,077	62	.42
1964	96,281	26	.28	45,310	8	.18	40,678	25	.54	182,269	59	.32

TABLE 26—MASS X-RAY SURVEYS FOR YEAR ENDED 31ST DECEMBER, 1964

Age	Number X-rayed	Active Cases		Suspect Active at 31st December		Inactive Cases		Other Conditions Requiring Investigation
		Number	Rate per 1,000	Number	Rate per 1,000	Number	Rate per 1,000	
			METROPOLITAN AREAS					
15-19	12,475	—	—	—	—	25	2.00	19
20-24	7,657	2	.26	—	—	8	1.04	13
25-29	5,674	4	.71	—	—	19	3.35	7
30-34	6,315	2	.31	1	.15	30	4.75	18
35-39	8,939	2	.22	2	.22	52	5.8	20
40-44	10,104	3	.28	3	.28	56	5.54	42
45-49	9,277	3	.32	3	.32	96	10.34	34
50-54	9,061	1	.11	4	.44	110	12.14	59
55-59	7,200	1	.13	5	.65	125	17.36	63
60-64	6,089	1	.16	1	.16	111	18.2	59
65-69	4,923	2	.40	2	.40	79	16.0	66
70-74	4,134	2	.48	2	.48	64	19.59	47
75 and over	4,433	3	.67	1	.22	81	18.5	90
Totals	96,281	26	.27	24	.25	856	8.89	537

TABLE 27—MASS X-RAY SURVEYS FOR YEAR ENDED 31ST DECEMBER, 1964

Age	Number X-rayed	Active Cases		Suspect Active at 31st December		Inactive Cases		Other Conditions Requiring Investigation
		Number	Rate per 1,000	Number	Rate per 1,000	Number	Rate per 1,000	
CITY STATIC UNIT								
15-19	9,040	2	.22	—	—	74	8.18	80
20-24	5,792	3	.52	1	.17	32	5.5	13
25-29	3,752	3	.79	2	.53	69	18.39	15
30-34	3,472	2	.57	—	—	91	26.2	11
35-39	3,857	1	.26	1	.26	218	56.6	23
40-44	3,564	3	.84	—	—	201	56.2	14
45-49	2,627	2	.76	1	.38	238	90.6	28
50-54	2,025	2	.99	1	.49	268	132.34	32
55-59	1,582	—	—	—	—	254	160.5	27
60-64	1,771	2	1.13	2	1.12	245	138.3	31
65-69	1,438	2	1.38	1	.69	205	142.5	28
70-74	811	2	2.46	—	—	155	191.1	23
75 and over	948	1	1.05	1	1.05	155	163.5	28
Totals..	40,678	25	.54	10	.24	2,205	54.25	353

TABLE 28—MASS X-RAY SURVEYS FOR YEAR ENDED 31ST DECEMBER, 1964

Age	Number X-rayed	Active Cases		Suspect Active at 31st December		Inactive Cases		Other Conditions Requiring Investigation
		Number	Rate per 1,000	Number	Rate per 1,000	Number	Rate per 1,000	
COUNTRY AREAS								
15-19	6,309	—	—	—	—	14	2.2	12
20-24	5,085	—	—	—	—	12	2.36	7
25-29	4,525	—	—	1	.22	19	4.2	16
30-34	4,496	1	.22	1	.22	18	4.0	8
35-39	4,848	1	.21	2	.42	32	6.6	12
40-44	4,358	1	.23	—	—	39	8.95	23
45-49	3,919	1	.26	2	.52	52	13.26	18
50-54	3,456	2	.59	1	.29	46	13.3	32
55-59	2,765	1	.36	2	.72	36	13.02	32
60-64	1,817	—	—	—	—	44	24.21	18
65-69	1,537	—	—	1	.65	39	25.37	19
70-74	1,091	—	—	—	—	42	38.5	21
75 and over	1,104	1	.91	—	—	31	28.08	18
Totals..	45,310	8	.18	10	.22	424	9.35	236

TABLE 29—CITY X-RAY UNIT EXAMINATION, 1964

Categories	Number Examined	New Active T.B. X-rayed Current Year	Active Rate per 1,000 Examined	Active T.B. Previous Years
Contacts	1,971	2	1.06	2
Probationer Nurses, Police Recruits etc.	2,204	—	—	—
Migrants (new arrivals)	8,863	2	.23	3
Referred by private doctors	6,095	6	.98	—
Commonwealth Public Servants	1,703	—	—	—
State Public Servants	766	—	—	—
Industrial Groups	729	—	—	—
Pensioners	1,763	—	—	—
Volunteers	5,755	5	.87	1
Teachers Training College	3,852	—	—	—
University Students	2,758	1	.36	—
Mantoux +ve Children and Contacts	1,391	2	1.4	—
Inactive Previous Surveys —Re X-rayed	2,828	7	2.48	3
	40,678	25	.54	10

TABLE 30—CHEST CLINIC ATTENDANCES FOR THE YEAR ENDING 31ST DECEMBER, 1964

	Direct Referral by Private Doctor	Referral Resulting from Abnormal Mass X-ray Film	Contact of Known Case	Routine Examination of Police Recruits, Nurses, University Students, etc.	Total
First visit to Clinic	481	351	333	246	1,411
Previously attended Clinic but first time in current year					5,766
Subsequent attendance in current year					12,859

	Adults	Children 16 Years and Under	
Total attendance for year ending 31st December, 1964	18,162	1,874	20,036

TABLE 31—CONTACT CLINIC ATTENDANCES FOR THE YEAR ENDING 31ST DECEMBER, 1964

	Contact of Known Case	Routine Examination of Police Recruits, Nurses, University Students, etc.	Total
First visit to Clinic	1,443	1,292	2,735
Previously attended Clinic but first time in current year			647
Subsequent attendance in current year			6,449

	Adults	Children 16 Years and Under	
Total attendance for year ending 31st December, 1964	6,040	3,791	9,831

TABLE 32—EPIDEMIOLOGICAL TUBERCULIN TESTS FOR YEAR ENDED 31ST DECEMBER, 1964

TYPE OF SURVEY—SCHOOL CHILDREN, NURSES, POLICE RECRUITS, ETC. (EXCLUDING CONTACTS)

Age	Number Tested	Type of Test		Positive				Negative	
		Mantoux 10 Tu of OT	Heaf OT	Not Previously Vaccinated with B.C.G.		Previously Vaccinated with B.C.G.		No.	Per Cent*
				No.	Per Cent*	No.	Per Cent†		
0- 4	69	69	—	1	1.58	6	—	62	98.42
5- 9	9,548	9,548	—	74	.79	138	—	9,336	99.21
10-14	10,142	10,142	—	301	3.06	312	—	9,529	96.94
15-19	1,861	1,861	—	111	10.13	766	—	984	89.87
20-24	281	281	—	30	26.55	168	—	83	73.45
25-29	134	134	—	31	41.33	59	—	44	58.67
30-34	84	84	—	26	50.00	32	—	26	50.00
35-39	82	82	—	33	56.88	24	—	25	43.12
40-44	76	76	—	33	60.00	21	—	22	40.00
45-49	64	64	—	31	68.88	19	—	14	31.12
50 and over	72	72	—	34	61.80	17	—	21	38.20
Totals	22,413	22,413	—	705	3.38	1,562	—	20,146	96.62

*This is a percentage of the number of persons tested less the number of those persons tested who were previously vaccinated with B.C.G.

†This percentage relates to the number tested.

TABLE 33—EPIDEMIOLOGICAL TUBERCULIN TESTS FOR YEAR ENDED 31ST DECEMBER, 1964

TYPE OF SURVEY—CONTACTS

Age	Number Tested	Type of Test		Positive				Negative	
		Mantoux 10 Tu of OT	Heaf OT	Not Previously Vaccinated with B.C.G.		Previously Vaccinated with B.C.G.		No.	Per Cent*
				No.	Per Cent*	No.	Per Cent†		
0- 4	697	697	—	15	3.33	247	—	435	96.67
5- 9	549	549	—	10	2.77	189	—	360	97.23
10-14	353	353	—	14	6.79	147	—	192	93.21
15-19	263	263	—	13	10.74	142	—	108	89.26
20-24	190	190	—	26	31.71	108	—	56	68.29
25-29	316	316	—	37	27.61	182	—	97	72.39
30-34	197	197	—	65	45.45	54	—	78	54.55
35-39	176	176	—	57	44.19	47	—	72	55.81
40-44	134	134	—	63	60.00	29	—	42	40.00
45-49	90	90	—	42	60.00	20	—	28	40.00
50 and over	267	267	—	165	61.88	—	—	102	38.12
Totals	3,242	3,242	—	507	24.36	1,165	—	1,570	75.64

*This is a percentage of the number of persons tested less the number of those persons tested who were previously vaccinated with B.C.G.

†This percentage relates to the number tested.

TABLE 34—B.C.G. VACCINATIONS 1964

Age Group	Contacts	Others	Total Vaccinated
0- 4	238	42	280
5- 9	174	25	199
10-14	94	9,526	9,620
15-19	77	1,011	1,088
20-24	44	79	123
25-29	66	46	112
30-34	52	31	83
35-39	50	24	74
40-44	24	24	48
45-49	20	24	44
50-54	20	10	30
55-59	10	7	17
60-64	14	—	14
65-69	7	—	7
70-74	3	—	3
75 and over	3	—	3
Total	896	10,849	11,745

TABLE 35—RETESTING OF B.C.G. VACCINATIONS, YEAR ENDING 31ST DECEMBER, 1965

	Retested	Post B.C.G. Positive	Per Cent Positive	Post B.C.G. Negative	Per Cent Negative
2 months after B.C.G.	1,408	1,321	93.8	87	6.1
12 Months after B.C.G.	228	207	90.8	21	9.2
2 Years after B.C.G.	147	128	87.1	19	12.8
3 years after B.C.G.	176	147	83.5	29	16.5
4 years after B.C.G.	165	150	90.9	15	9.1
5 years after B.C.G.	197	181	91.8	16	8.1
6 years after B.C.G.	180	166	92.2	14	7.7
7 years after B.C.G.	122	113	92.6	9	7.4
8 years after B.C.G.	398	373	93.7	25	6.3
Total	3,021	2,786	92.2	235	7.7

6. SUMMARY AND CONCLUSIONS

Once again the control of communicable diseases gives a number of causes for satisfaction. The continued decline in infectious hepatitis, whether it reflects the natural history of the disease or an improvement in sanitation or food handling, is a cause of satisfaction. The risk of contracting hepatitis appears to have declined to about half that of 1962 and one fifth that of 1961.

The absence of any case of diphtheria or tetanus reflects, at least in part, the value of immunization, but serves to emphasise that the programmes must continue.

Bowel infections have changed in character from the previous year, and there has been some decrease in numbers reported; but these remain at an unacceptably high level.

The absence of confirmed cases of poliomyelitis is gratifying, but the Principal Medical Officer rightly stresses the need for more widespread protection by immunization.

New notifications and deaths from tuberculosis have both declined to the lowest levels ever recorded. Notifications decreased by 25 per cent and deaths by 63 per cent of the previous year's figures.

The report calls attention to continued progress in occupational health, with special reference to the handling of pesticides, lead, and sources of ionizing radiation, and to the extent and effects of noise in industry.

Progress reported in recent years, in the field of environmental sanitation, continues. The requests for assistance from country towns and outer suburban areas have again increased. Of all the many and varied activities of the Department, the solving of difficult drainage and disposal problems is the one which appears to give the greatest satisfaction and to bring the greatest number of expressions of praise from local boards and individual householders.

The Central Board wishes to express its thanks to all local boards for their efforts and co-operation during another year.

The Board appreciates the work of its own officers and the staff of the Department of Public Health, and is grateful to many other Government Departments and the Institute of Medical and Veterinary Science for invaluable assistance.

P. S. WOODRUFF, Chairman.

J. B. CLELAND
G. H. McQUEEN
C. J. H. WILLIAMSON
A. BERTRAM COX
Members.

R. W. LAVER, Secretary.

Adelaide, 11th October, 1965.